DoD 5010.31 - H

MANPOWER,
RESERVE AFFAIRS
AND LOGISTICS

TRAINING GUIDE
FOR THE
MANAGEMENT ANALYST
INDUSTRIAL ENGINEERING TECHNICIAN

Defense Productivity Program Office

Office of Assistant Secretary of Defense (MRA & L)

TRAINING GUIDE

MANAGEMENT ANALYST

INDUSTRIAL ENGINEERING TECHNICIAN

Prepared by:

Defense Productivity Program Office
OASD (MRA&L)

July 1979

Management education and training programs are established throughout the Federal Government to provide personnel engaged in management and staff support functions an opportunity to obtain the specialized education required by their job. These programs are primarily Service/Agency operated schools offering management training covering a variety of subjects. Within the Department of Defense, the Management Education and Training Program includes more than 273 resident courses with a capacity to train over 32,000 personnel. These courses address common concepts and common skills for management needs.

Education and Training are essential steps toward the adoption of new techniques which offer solutions to the problems facing DoD. The continuous development of new technology places a permanent demand upon new education and training. In light of this, supervisors and personnel specialists are encouraged to take a critical review of their workforce to assure that the education required to maintain and enhance staff capability to accomplish a given mission is available and obtained.

The information contained in this booklet pertains to the GS-343 and GS-895 Job Classification Series. The data was compiled from various training publications promulgated throughout the Federal Government. It is assembled, primarily, for personnel directly working for the Department of Defense within the parameters set forth in DoD Directive 5010.31 "DoD Productivity Program" and DoD Instruction 5010.34, "Productivity Enhancement, Measurement, and Evaluation - Operating Guidelines and Reporting Instructions."

TABLE OF CONTENTS

TABLE OF CONTENTS, Continued

TABLE OF CONTENTS, Continued

C1. CHAPTER 1

INTRODUCTION

C1.1. GENERAL

C1.1.1. DoD Directive 5010.31 sets forth policies and responsibilities for a continuing program to enhance, measure, and evaluate productivity throughout the Department of Defense. Productivity is defined as the ratio of goods produced or services rendered (output) to resources expended (input). Priority emphasis, on productivity enhancement, measurement and evaluation, is required at all organization echelons within the Department of Defense.

C1.1.2. Training and education required under DoD Directive 5010.31 is provided by the U.S. Army Management Engineering Training Agency through the Department of the Army. However, there are several other management training courses offered throughout the Federal Government that should also be considered. The responsibility for determining and obtaining the necessary training for work assigned under DoD Directive 5010.31 rests with each activity personnel training center and the supervisor given the productivity assignment. The disposition of available training funds to meet the educational demand is the responsibility of each activity personnel training director.

C1.1.3. To aid in determining the appropriate training required by grade, a career progression level has been developed. The career-progression levels considered in these guidelines are defined as follows:

Primary Level -	GS-5 to 8
Intermediate Level -	GS-9 to 12
Advanced Level -	GS-13 to 15

C1.1.4. To encourage continuous improvement in management practices, and ensure professional performance in the work effort, several training courses, conducted by various Federal Agencies, have been selected for each progression level, as conducive to the successful implementation of DoD Directive 5010.31. The courses contained herein, are specifically designed to aid in planning, conducting and evaluating organizational work improvements.

C1.1.5. Figure C1.F1. (Chart 1), Figure C1.F2. (Chart 2), and Figure C1.F3. (Chart 3) show the sequential order of training courses recommended for each level of

progression. However, these are to be used only as a guide and not be construed to mean all or any of the listed courses are prerequisite to career progression or promotion. Each supervisor must look at their own situation to determine the course required to suit staff needs.

C1.1.6. Courses listed herein as conducted by the Civil Service Commission are offered primarily in the Washington, DC, area. Similar courses are offered in other regional areas. Agencies should contact their regional Civil Service Commission Training Center to determine available courses. A listing of Civil Service Commission Training Centers is provided as Appendix 1.

C1.1.7. To obtain maximum benefit from any training, it is important to consider the mission assignment, the course prerequisite, and the educational background of the individual selected to attend. A solid educational foundation, plus care in development training provide effective results.

C1.1.8. The following guidelines should prove helpful in determining/maintaining the educational requirements for an effective staff of management analysts/industrial engineering technicians.

C1.2. QUALIFICATION STANDARDS

The following definitions of the job classification series contained herein are the current qualification standards for these series under the Classification Act of 1949. They are provided to aid management in ensuring that an individual meets the required experience and training. Detailed standards of these job classification series are contained in Civil Service Handbook X 118.

C1.2.1. Industrial Engineering Technician Series, GS-895. Industrial engineering technician positions are concerned primarily with planning, designing, analyzing, improving, and installing integrated work systems comprised of men, materials, and equipment, for use in producing products, rendering services, repairing equipment, or moving and storing supplies and equipment. The work typically involves studies of engineered time standards methods engineering, layout design of work centers, control systems, materials handling, or manpower utilization. It requires a knowledge of the principles and techniques of industrial engineering and practica1 knowledge of pertinent industrial and related work processes, facilities, methods, and equipment.

C1.2.2. Management Analysis Series, GS-343. Management analysts, for the purpose of improving the efficiency and effectiveness of organizations, administer or perform work of analyzing, evaluating, developing, advising on, promoting, or improving;

managerial policies, practices, methods, and procedures; organizational structures; the delegation, distribution and assignment of functions and responsibilities; work methods and procedures; management control techniques and systems (e.g., work reporting and measurement systems and procedures); and similar management functions. To perform this work, management analysts combine a high order of analytical work with the systematic application of a wide range of practical and theoretical knowledge of management-functions, practices, and methods.

C1.3. TRAINING COURSES

Training courses recommended for Job Classification Series 343 (Management Analyst), and 895 (Industrial Engineering Technician) are depicted on the following pages. Two distinct Charts, the "Guide to Selection of Training Courses" and the "Building Block Training Concept," are presented for each primary, intermediate, and advanced, job progression level.

C1.3.1. The "Guide" shows the number of courses available for each job level and the recommended sequence for attendance. To the right of each course, under each job title is an alpha "priority code." The "priority code" is the significance attached to each particular job series requirement for each training course. Attendance at all courses would undoubtedly round out an individual and fully prepare him/her for the next position level of progression. However, it is recognized that there are existing factors such as time, budget constraints, and the luxury of being able to spare an individual for the required training time. Therefore, the priority code provides the supervisor with a factor, for determining the essential training that is required for subordinates in light of mission responsibilities and extenuating circumstances.

C1.3.2. The "priority codes" are defined as follows:

C1.3.2.1. Primary Training (P). Essential for the development of basic skills required.

C1.3.2.2. Advanced Training (A). Provides a more comprehensive understanding of management practices and introduces additional analytical techniques.

C1.3.2.3. Specialized Training (S). Provides advanced state-of-the-art techniques which prepare the individual for specialized work.

C1.3.2.4. Beneficial Training (B). Elective courses not immediately essential to the work being performed, but beneficial to have.

C1.3.3. The "Building Block Concept" is a graphic representation of the "Guide." Its purpose is to portray a logical buildup of courses to achieve the ultimate in training for each level. In some cases the lower tiered courses are required prior to taking a course shown in the upper tiers. The "Course Description" indicates whether or not a prerequisite course is necessary. This building block concept is merely a guide. Selection of appropriate training for an individual employee must ultimately be based on the requirements of the job to which the employee is currently, or projected to be, assigned.

Table C1.T1. Guide to Selection of Training Courses for Management Analyst/Industiral Engineer Technician Primary Level

	Training Course	Priority Code
1.	Mathematics for Management	P
2.	Fundamental Management Techniques	P
3.	Introduction to Public Administration	P
4.	Administrative Systems Analysis and Design	P
5.	MTM - 1	P/S
	MTM - 2	A
	MTM - 3	A
6.	Engineered Performance Standards for Facilities Engineering Estimators	P
7.	Defense Work Methods & Standards	P
8.	Workshop in Flow Process Charting	B
9.	Storage & Materials Handling	B
10.	Warehouse Operations Management	B
11.	Elements of Management Analysis	A
12.	Management Analysis & Review	A
13.	Forms Improvement	A
14.	Mechanizing Paperwork Systems	S
15.	Equipment for Information Processing	S/B
16.	Data Communication Orientation Seminar	S/B
17.	Computer/Microfilm Information Systems	S/B
18.	Correlation & Regression Analysis	A
19.	Cost Estimating Techniques	A
20.	Productivity Orientation Seminar	B
21.	Management Development Seminar	A
22.	Seminar on Modern Management Theories	A

Figure C1.F1. Building Block Training Concept
Management Analyst/Industrial Engineer Technician
Primary Level (Chart 1)

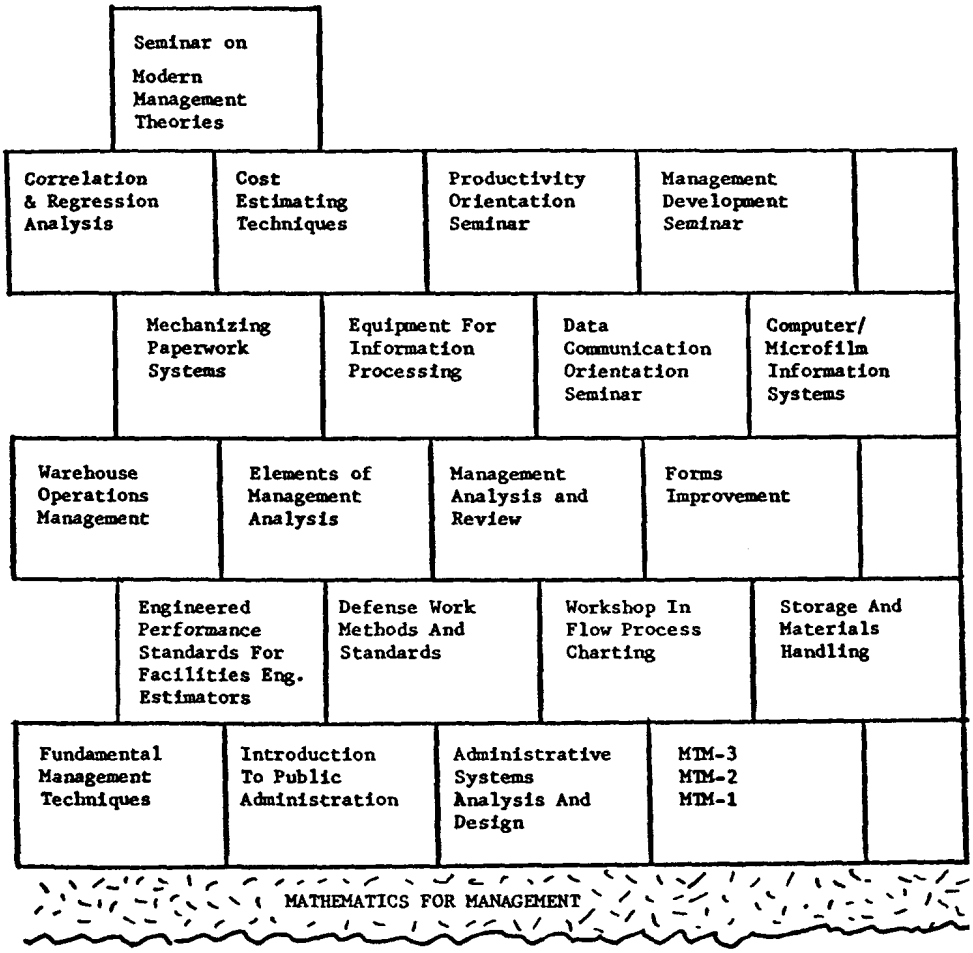


Table C1.T2. Guide to Selection of Training Courses for Management Analyst/Industrial Engineer Technician Intermediate Level

	Training Course	Priority Code
1.	Defense Work Measurement Standard Time Data	P
2.	Statistical Inference	P
3.	Statistical Techniques for Analysis	P
4.	New Directions in Management Engineering Technology	P
5.	Seminar on ADP in Technical Information Systems	A
6.	Defense Data Management	B
7.	Directives Improvement	S
8.	Survey of Data Entry/Computer Output Devices	S
9.	Organization Planning	B
10.	Financial Planning & Control Techniques	P
11.	Management Sciences Orientation	A
12.	Selected Techniques for Operations Analysis	A
13.	Capital Management for Government	A
14.	Cost Benefit Workshop	A
15.	Work Design	B
16.	Work Planning &.Control Systems	P
17.	Management Introduction to ADP	B
18.	Automatic Data Processing Orientation Seminar	A
19.	ADP Systems Analysis.& Design	A
20.	Planning and Conducting Management Audits and Studies	A
21.	Human Behavior in Organizations	B
22.	Management of Managers	B
23.	Principles and Applications of Value Engineering	S
24.	System Engineering	B
25.	Effective Briefing Techniques	B
26.	Modernizing Management Reports	A
27.	Management of Defense Acquisition Contracts	S
28.	Defense Inventory Management	S

Figure C1.F2. Building Block Training Courses
Management Analyst/Industrial Engineer Technician
Intermediate Level (Chart 2)

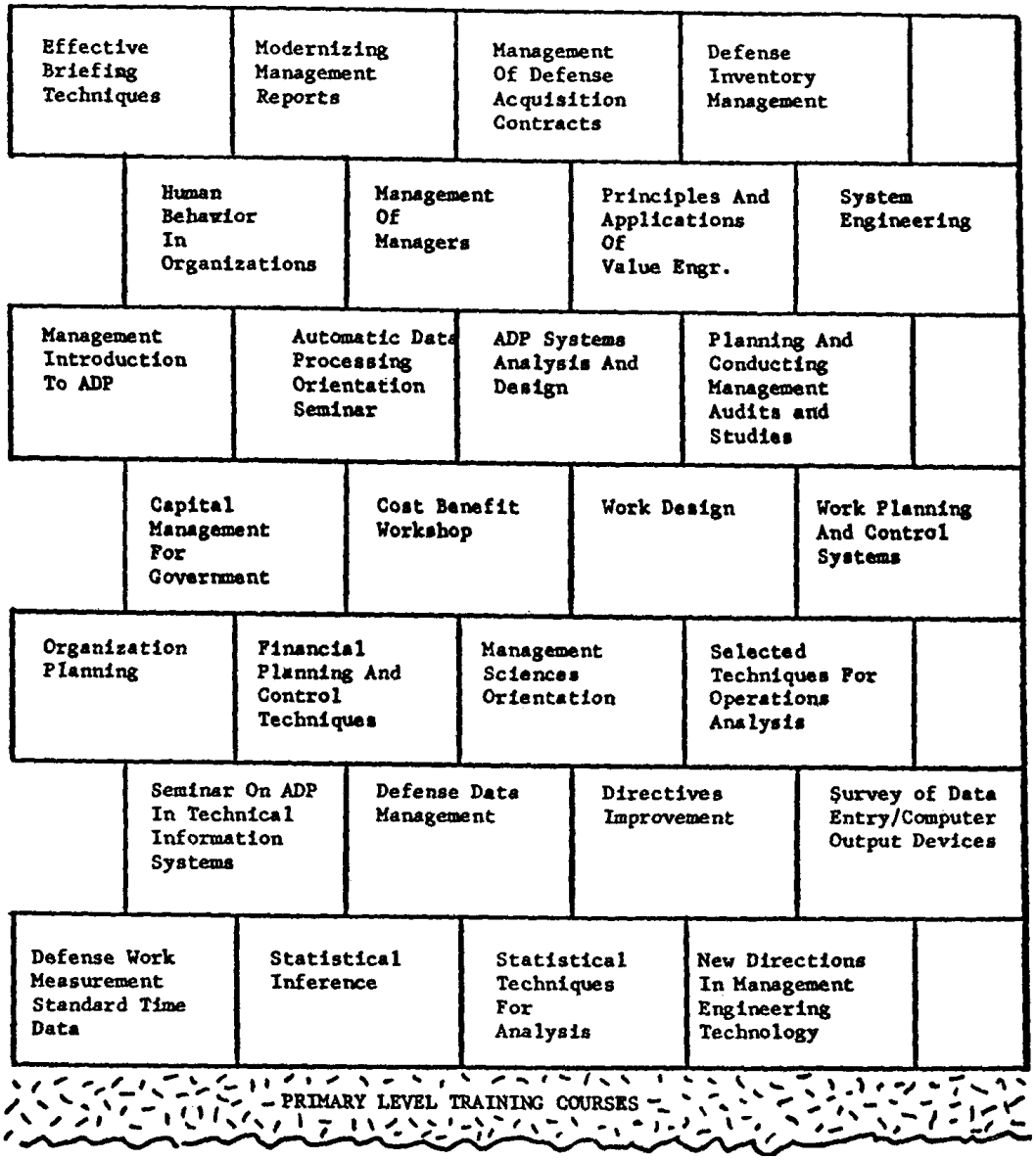
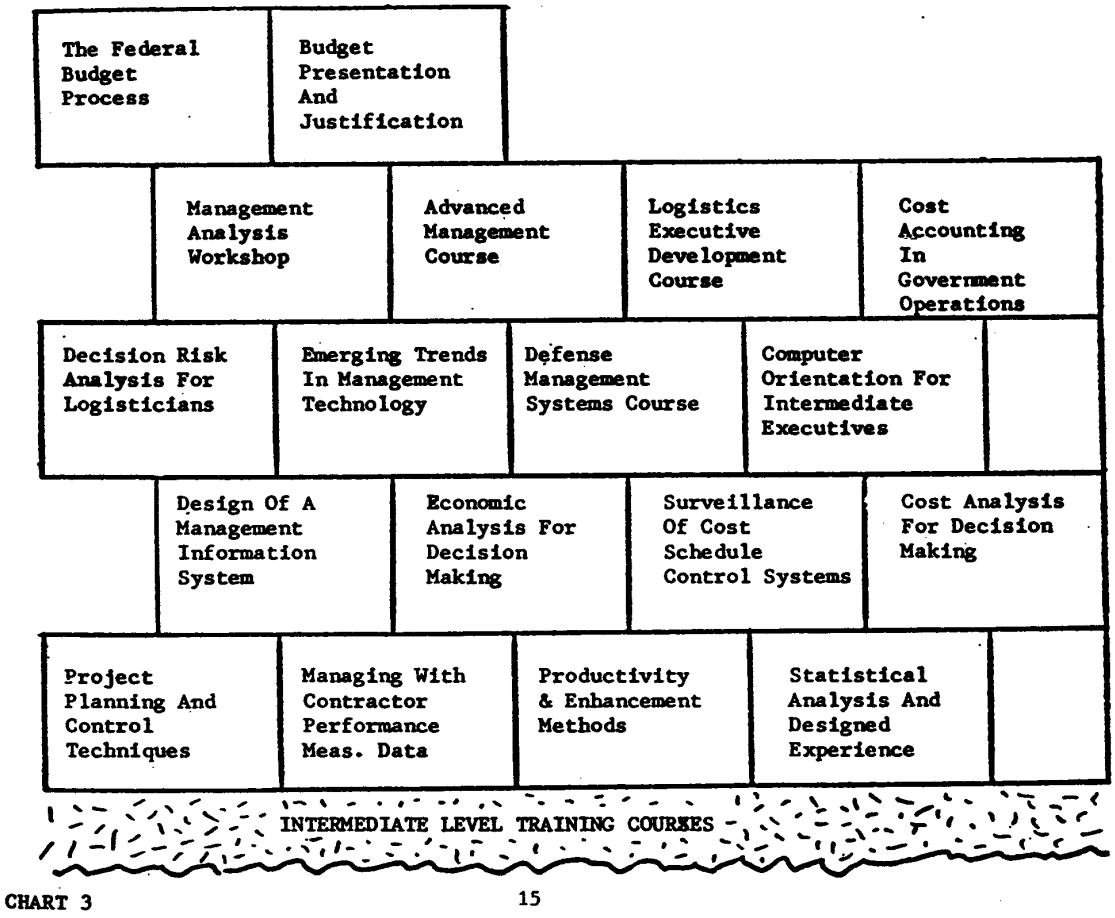


Table C1.T3. Guide to Selection of Training Courses for Management Analyst Advanced Level

	Training Course	Priority Code
1.	Project Planning & Control Techniques	P
2.	Managing With Contractor Performance Measurement Data	S
3.	Productivity & Enhancement Methods	P
4.	Statistical Analysis & Designed Experiments	A
5.	Design of a Management Information System	A
6.	Economic Analysis for Decision Making	A
7.	Surveillance of Cost Schedule Control Systems	S
8.	Cost Analysis for Decision Making	A
9.	Decision Risk Analysis for Logisticians	S
10.	Emerging Trends in Management TechnologyS	S
11.	Defense Management Systems Course	A
12.	Computer Orientation for Intermediate Executives	B
13.	Management Analysis Workshop	B
14.	Advanced Management Course	B
15.	Logistics Executive Development Course	B
16.	Cost Accounting in Government Operations	B
17.	The Federal Budget Process	B
18.	Budget Presentation and Justification	B

Figure C1.F3. Building Block Training Concept
Management Analyst
Advanced Level (Chart 3)



C2. CHAPTER 2

COURSE DESCRIPTIONS
PRIMARY LEVEL

Table C2.T1. Index

C2.1. MATHEMATICS FOR MANAGEMENT

C2.1.1. Civil Service Commission. A 10-day (1 day for 7 weeks and 3 days during 8th week) course.

C2.1.2. Description. This program provides a practical survey of mathematics statistics, probability, and of applications of modern analytical techniques. It covers such topics as real numbers and their uses; elementary algebraic functions; analytical geometry; elementary calculus; algebra of logic; elementary probability; inference-making; statistical methods; mathematical programming; simulation; probability models; and network techniques. Three specially prepared texts will be issued to each participant and will be used as the basic course material. Homework assignments will be made following each session to reinforce classroom instruction. At the conclusion of the course, participants will have sufficient understanding of the essential elements of mathematics to:

C2.1.2.1. Recognize problems amenable to mathematical-statistical approaches;

C2.1.2.2. Interpret and evaluate mathematical statistical approaches;

C2.1.2.3. Communicate with specialists and management about quantitative matters; and

C2.1.2.4. Comprehend and utilize quantitatively oriented reports and materials.

C2.1.3. Prequisites. Government careerists requiring a practical knowledge of mathematics are eligible for nomination to this program. An understanding of basic algebra, either brought to the program or gained through class and home study, will serve as a basis for much of the mathematics presented. Preference will be given to those participants whose work requires a practical knowledge of mathematics, statistics, and analytical techniques.

C2.2. FUNDAMENTAL MANAGEMENT TECHNIQUES

C2.2.1. Civil Service Commission. A 3-day course offered three times a year.

C2.2.2. Description. This course provides a basic knowledge of several management techniques useful to any intern starting a career with the Government. It is designed to equip interns with specific skills essential to their development as managers. Among the areas to be covered will be planning, scheduling, and controlling of work. PERT and other graphic planning devices, problem solving models, scheduling forms, and controlling methods will be discussed in lectures and workshops. To insure maximum involvement of the students, each session will be restricted to 30 participants.

C2.2.3. Prerequisites. All persons appointed from the Management Intern register of the PACE Examination are eligible for nomination. In addition, all employees participating in an agency intern program at the management entry level are eligible, regardless of whether or not appointed from the Management Intern register. Other employees, GS-5 through GS-9 or equivalent, may be nominated provided the individual is being developed for assumption of management responsibilities.

C2.3. INTRODUCTION TO PUBLIC ADMINISTRATION

C2.3.1. Civil Service Commission. A 3-day course offered three times a year.

C2.3.2. Description. This course will serve as an introduction to the field of Public Administration for those interns who have had no training in this area. It will cover the history, development, and current status of Public Administration, devoting attention to general aspects of organization theory; line-staff relationships; interagency coordination; communication; and the personnel, budgeting, and planning functions, especially as all these relate to the Federal Government and its changing relationship with State and local governments. It will be limited to 30 participants in an effort to maximize general class participation.

C2.3.3. Prerequisites. All persons appointed from the management intern register of the PACE Examination are eligible for nomination. In addition, all employees participating in an Agency intern program at the management entry-level are eligible regardless of whether or not appointed from the management intern register. Other employees, GS-5 through GS-9 or equivalent, may be nominated provided the individual is being developed for assumption of management responsibilities.

C2.4. ADMINISTRATIVE SYSTEMS ANALYSIS AND DESIGN (JT) 7A-F18

C2.4.1. AMETA, Rock Island, Illinois. A 2-week course.

C2.4.2. Description

C2.4.2.1. This course is designed to provide the enrollees with an understanding and a working knowledge of the techniques employed in analyzing, evaluating, improving, and designing effective administrative systems required to support management policy and decisions.

C2.4.2.2. Topics include a review of the functions of management to clearly define the role of administrative systems analysis in these areas: a discussion of the systems function; an introduction to the phases of a systems project and the techniques used in systems analysis; procedures analysis; forms, reports, and records analysis; off ice layout and space planning; and procedure writing. The relationship of automation to manual systems, tools and techniques required for the proper preparation and presentation of systems proposals to management, and the role of the analysts in implementing and following up system proposals are also presented. These and related topics are discussed and a substantial amount of class time is devoted to practical application of learned techniques during individual and group solution of realistic case problems.

C2.4.3. Prerequisites. This course is designed for military and civilian personnel (e.g., management analysts, systems analysts, administrative assistants, manpower control specialists, etc.) who analyze, evaluate, and develop improved administrative systems and procedures.

C2.5. METHODS-TIME MEASUREMENT -1 (MTM-1)

C2.5.1. AMETA, Rock Island, Illinois. A 3-week course.

C2.5.2. Description

C2.5.2.1. This course is designed to provide the enrollees with a working knowledge of the Methods-Time Measurement Technique for establishing engineered standards.

C2.5.2.2. A standardized course of instruction developed by the Methods-Time Measurement (MTM) Association (a nonprofit organization) and presented by an Association-certified MTM instructor. The course covers procedures to be used in the study and analysis of work motions and the assigning of proper time values to each basic motion. Specific items covered include:

C2.5.2.2.1. Developing and improving methods.

C2.5.2.2.2. Establishing production time standards.

C2.5.2.2.3. Developing standard data.

C2.5.2.2.4. Using MTM data for estimating and scheduling.

C2.5.2.2.5. Using MTM data for training operators.

C2.5.2.2.6. General Purpose Data (GPD) familiarization.

C2.5.2.2.7. MTM-2 and MTM-3 familiarization.

C2.5.2.3. The final examination for this course is a standardized test graded by the MTM Association Enrollees who achieve a passing grade on this examination will then receive a certificate of recognition as an MTM-1 applicator from the MTM Association.

C2.5.3. Prerequisites. This course is designed for persons presently engaged in (or soon to be assigned to) methods study or work measurement activity and who will be assigned to activities requiring the application of MTM-1. This course is not designed for supervisory and staff personnel who require an appreciation of methods improvement or work measurement.

C2.6. METHODS-TIME MEASUREMENT -2A (MTM-2A) (JT)

C2.6.1. AMETA, Rock Island, Illinois. A 1-week course.

C2.6.2. Description

C2.6.2.1. This course is designed to provide the enrollee with a working knowledge of the MTM-2 systems, the second general level of MTM data.

C2.6.2.2. A standardized course of instruction developed by the MTM Association (a nonprofit organization) and presented by an Association-certified MTM-2 instructor. This course covers procedures to be used in the study and analysis of work motions, and the assigning of proper time values to these motions. The specific items covered include:

C2.6.2.2.1. Development of MTM-2.

C2.6.2.2.2. Study of GET and PUT and WEIGHTS.

C2.6.2.2.3. Study of applied pressure, regrasp, eye action,foot motion, step, bend and arise, and crank.

C2.6.2.2.4. Study of simo motions and combined motions.

C2.6.2.2.5. Practical exercises and examinations.

C2.6.2.2.6. Film loop analysis.

C2.6.3. Prerequisites. This course is designed for qualified MTM-1 applicators who intend to use MTM-2 for estimating and standard setting purposes. Persons enrolling in this course should be presently engaged in methods study or work measurement activity. This course is not designed for supervisory and staff personnel who require an appreciation of methods improvement and work measurement. Certification in MTM-1 is a prerequisite for this course.

C2.7. METHODS-TIME MEASUREMENT-2B (MTM-2B) (JT)

C2.7.1. AMETA, Rock Island, Illinois. A 2-week course.

C2.7.2. Description

C2.7.2.1. This course is designed to provide the enrollee with a working knowledge of MTM-2B.

C2.7.2.2. A standardized course of instruction developed by the MTM Association (a nonprofit organization) and presented by an Association-certified MTM-2 instructor. The course covers procedures to be used in the study and analysis of work motions and the assigning of the proper time values to the motions. During the first week, a review of Work Simplification Methods Improvement, and the basic elements of MTM-1 are presented. The MTM-2 elements and principles of application are studied during the second week. Specific items covered in the first week include:

C2.7.2.2.1. Work simplification and methods.

C2.7.2.2.2. The basic motions and definitions of MTM-1.

C2.7.2.2.3. Developing standard time data.

C2.7.2.3. Specific items covered in the second week (MTM-2).include:

C2.7.2.3.1. Development of MTM-2.

C2.7.2.3.2. Study of GET and PUT and WEIGHTS.

C2.7.2.3.3. Study of apply pressure, regrasp, eye action, foot motion, step, bend and arise, and crank.

C2.7.2.3.4. Study simo motions and combined motions.

C2.7.2.3.5. Practical exercises and examinations.

C2.7.2.3.6. Film loop analysis.

C2.7.3. Prerequisites. This course is designed for those individuals who are not qualified in MTM-1, but who intend to use-MTM-2 for estimating and standard-setting purposes. Persons enrolling in this class should be presently engaged in the methods study or work-measurement activity. This course is not designed for supervisory and staff personnel who require an appreciation of methods improvement and work measurement.

C2.8. METHODS-TIME MEASUREMENT -3 (MTM-3)

C2.8.1. AMETA, Rock Island, Illinois. A 1-week course.

C2.8.2. Description

C2.8.2.1. This course is designed to provide the enrollee with a working knowledge of MTM-3, which is the third-general level of the family of MTM data.

C2.8.2.2. A standardized course of instructions developed by the MTM Association (a nonprofit organization) and presented by an Association-certified MTM-3 instructor. The course is intended as a supplementary tool for those who are already qualified in MTM-2 and have a need for a system of time data even faster in application than MTM-2. MTM-3 is applicable in situations where there is considerably less demand for detailed methods description and highly precise time deteminations.

C2.8.3. Prerequisites. This course is designed for qualified MTM-2 applicators who wish to extend their use of the MTM systems to jobs that occur in small batches and where the methods and motion distances can vary considerably from cycle-to-cycle. This course is not designed for supervisory and staff personnel who require an appreciation of methods improvement and work measurement.

NOTE: Certification in MTM-2 is a prerequisite for this course.

C2.9. ENGINEERED PERFORMANCE STANDARDS (EPS) FOR FACILITIES ENGINEERING ESTIMATORS

C2.9.1. AMETA, Rock Island, Illinois. A 2-week course.

C2.9.2. Description

C2.9.2.1. This course is designed to provide the enrollees with a working knowledge of Engineered Performance Standards (EPS) for planning and estimating work performed by the Facilities Engineering Division of a Defense installation.

C2.9.2.2. A course of instruction is presented that provides the enrollee with a thorough grounding in the application of standard data developed specifically for Real Property Maintenance applications. Army Technical Bulletins 420-1 through 420-30 are utilized in the course. Topics covered include the fundamentals of general data (job preparation, craft allowance, and travel times); fundamentals of draft data, job phasing, data presentation; and the procedure for applying engineered standards using job planning worksheets and nomographs.

C2.9.3. Prerequisites. This course is designed primarily for personnel presently engaged or who will be engaged as estimators in the work management center of the Facilities Engineering Directorate. However, consideration for enrollment will be given to supervisory and staff personnel having appropriate responsibilities in work management centers when class size permits.

C2.10. DEFENSE WORK METHODS AND STANDARDS

C2.10.1. AMETA, Rock Island, Illinois. A 5-week course.

C2.10.2. Description

C2.10.2.1. The specific course objectives are to provide the enrollee with the skills necessary to: analyze and design work methods and procedures; establish non-engineered work-measurement standards; establish engineered work-measurement standards; and design and use a work-measurement hierarchal structure that will support the information needs of the management processes of budgeting, manpower control, and work planning and control.

C2.10.2.2. The enrollee is presented a definitive concept of the Management Process to give him an understanding of the on-going activities of management. Within the framework of this Management Process, the Work-Measurement Standards and Methods efforts can be analyzed in detail and related to the total management effort.

C2.10.2.3. Thorough grounding is provided in various techniques employed in methods improvement and work measurement. Topics in the methods portion of the course include cost analysis, job enrichment, human relations, human factors engineering, work sampling, value engineering, process analysis, operations analysis, and multi-activity analysis. Facility layout and materials handling are also considered. Through lecture and practical exercise, the enrollee develops skill in analyzing, designing, developing, and presenting improved methods dealing with the flow of work, man activities, man-machine relationships, and crew activities.

C2.10.2.4. The work-measurement portion of the course concentrates on the development of work-measurement standards. Major emphasis is given to engineered standards; e.g., direct-time study, rated-work sampling, standard data systems, and predetermined time systems. Consideration is also given to development of non-engineered standards and standards for intermittent work flow. Topics include technical and professional estimates, statistical standards, simulation, and waiting-line techniques. These approaches are discussed as a means of handling work measurement in areas not readily adaptable to engineered standards.

C2.10.3. Prerequisites. The course is designed for persons presently engaged in, or soon to be assigned to, methods study and work measurement activities. This course is not designed for supervisory personnel nor staff personnel who require an appreciation of methods improvement and work measurement. Experience has shown that satisfactory performance in this course is unlikely without proficiency in basic

statistics and algebra; mathematical symbols; handling of decimals, fractions, and simple equations; and plotting of statistical data. Where this proficiency does not exist, an opportunity should be provided to the enrollee to develop these skills prior to assignment to the class.

NOTE: At the option of a Service, courses conducted by AMETA-accredited Service instructors may be reduced to 160 hours (4 weeks), if training in Service applications is provided under another training arrangement. AMETA must be advised in advance of the exercise of such an option each fiscal year.

C2.11. WORKSHOP IN PROCESS FLOW CHARTING

C2.11.1. Civil Service Commission. A 3-day course.

C2.11.2. Description. This course will bring participants up to a full professional level of proficiency in process flow charting. The ability to produce accurate and fully documented work process flow charts is a basic skill of the analyst. Using symbolism approved by the American Society of Mechanical Engineers, participants will develop and sharpen their skills with this basic tool for analysis and communication. Topics include: basic symbolism; chart construction; variations of charting; introduction to decision tables as a supplement to charting; using charts in analysis, documentation, presentations, and implementation.

C2.11.3. Prerequisites. Managers, technicians, and others who supervise or deal with management analysts, as well as new management analysts, employees being prepared for management analysis positions, and management analysts who feel the need for further training, are eligible to attend. There are no grade restrictions.

C2.12. STORAGE AND MATERIALS HANDLING

C2.12.1. General Services Administration. A 5-day course scheduled periodically in Arlington, VA, and other centers of Federal population.

C2.12.2. Description. The purpose of this course is to assist Federal Agencies in: utilizing storage facilities by better planning and layout of space to accommodate materials essential to mission; employing equipment to ensure smooth flow of materials in and out of inventory; and achieving optimum use of manpower, equipment, and facilities involved in storage operations. The course will develop a knowledge of current warehousing principles, methods, and techniques, and relate their application to the maintenance or improvement of operations. It will provide an opportunity for participants to discuss and solve problems relating to: space types and requirements computations; planning space layouts and storage plans; materials handling equipment; storage locations and locator systems; safety and protection of personnel.

C2.12.3. Prerequisites. This course is intended for Federal employees at the operating level and the first level of supervision. Management personnel who seek a review of storage and materials handling principles, methods, and techniques, and employees in training for positions in this field are eligible to attend.

C2.12.4. How to Make Nominations. Nominations should be submitted through Agency employee development officers to the Chief, Federal Supply Service Training Branch (FAAT), General Services Administration, Room 1028, Crystal Mall Building 04, Washington, DC. 20406, using Optional Form 37, "Nomination for Interagency Training." A brief description of the nominee's duties should be included in item of the OF 37.

C2.13. WAREHOUSE OPERATIONS MANAGEMENT (A-8C-0015) (NV)

C2.13.1. Naval School, Transportation Management, Naval Supply Center, Oakland, CA 94625. A 1-week course.

C2.13.2. Description

C2.13.2.1. To provide the student with knowledge of the policies, principles, and practices that pertain to warehousing and storage, materials handling, documentation, preservation, packaging, and packing.

C2.13.2.2. The instruction embodies warehousing planning and practices, material handling methods and equipment, preservation policies and processess, unit protection methods, and packing principles.

C2.13.3. Prerequisites. Regular and Reserve Officers of the Armed Forces, supervisory civil service personnel, and selected enlisted personnel.

C2.13.4. Security Clearance Required. None.

C2.14. ELEMENTS OF MANAGEMENT ANALYSIS

C2.14.1. Civil Service Commission. A 5-day course.

C2.14.2. Description. This course helps prepare participants to assist in management analysis provides background for successful completion of an studies and elementary study with minimum supervision. The following topics are covered: elementary organization and management theory; simple descriptive statistics for fact gathering; fundamental work-measurement methods; and basic report writing and information display.

C2.14.3. Prerequisites. Participation is open to all employees of any Federal, State, and local government who assist in management analysis work.

C2.15. MANAGEMENT ANALYSIS AND REVIEW

C2.15.1. Civil Service Commission. A 5-day course.

C2.15.2. Description. This course provides an overall view of the process of management analysis. It gives the new analyst a firm foundation in the management analysis cycle from planning a management analysis study to the report and evaluation of installed management systems. Classroom experience is provided to the participant through multiphase case study.

C2.15.3. Prerequisites. New management analysts, management interns, supervisors and managers who deal with management analysts, and others interested in improved efficiency of management systems are eligible to participate. There are no grade level restrictions.

C2.16. FORMS IMPROVEMENT

C2.16.1. General Services Administration. Two half-day sessions scheduled to meet Agency demand.

C2.16.2. Description. This workshop covers the presentation and application of techniques to improve the paperwork flow by simplifying and improving the forms used. Effective principles for approving, simplifying, combining, and eliminating forms are discussed and utilized. During the course the participants redesign and simplify a heavy usage form.

C2.16.3. Prerequisites. Management analysts persons who will be serving as instructors, or managerial personnel concerned with the problem of forms management are eligible.

C2.16.4. How to Make Nominations. Nominations should be submitted through Agency employee development officers to the Workshop director, National Archives and Records Service (NRI), General Services Administration, Washington, DC 20408, using Optional Form 37, "Nomination for Interagency Training."

C2.17. MECHANIZING PAPERWORK SYSTEMS

C2.17.1. General Services Administration. A 4-day workshop scheduled to meet Agency demand.

C2.17.2. Description. This workshop is designed to help management analysts and supervisors mechanize or automate their paperworking system. The focus is on the use of automation, but the workshop includes the use of mechanical tools when automation is not justified. Participants determine how to locate potential areas for mechanization in their offices and how to develop improvements. When accepted for the workshop, applicants will be sent a special form ("Potential Mechanization Projects"), which must be filled out and brought to the workshop on the opening day. These projects will be analyzed and preliminary plans developed by the participant during the workshop, with emphasis on the use of Source Data Automation (SDA) techniques.

C2.17.3. Prerequisites. Management analysts, persons who will be serving as instructors, or those who have direct responsibility for supervising systems involving paperwork or information processing are eligible.

C2.17.4. How to Make Nominations. Nominations should be submitted through Agency employee development officers to the Workshop Director, National Archives and Records Service (NRI), General Services Administration, Washington, DC 20408, using Optional Form 37, "Nomination for Interagency Training."

C2.17.5. Other Information. Agencies may obtain additional information by calling area code (202) 963-4425, or code 13, extension 34425.

C2.18. EQUIPMENT FOR INFORMATION PROCESSING

C2.18.1. Civil Service Commission. A 3-day seminar to be offered twice a year.

C2.18.2. Description. This seminar is designed to familiarize the participants with the use, performance, characteristics, selection and evaluation of some major classes and types of equipment utilized in the library and information environment for processing technical information. Emphasis will be placed on applications and performance of the equipment rather than on engineering specifications of internal mechanisms.

C2.18.3. Prerequisites. The seminar is designed for information specialists, librarians, computer specialists, system analysts, and other career Federal, State, and local government employees who are responsible for the design or management of technical information systems or the acquisition of equipment for such purposes.

C2.19. DATA COMMUNICATION ORIENTATION SEMINAR

C2.19.1. AMETA, Rock Island, Illinois. A 1-week course.

C2.19.2. Description

C2.19.2.1. This course is designed, to present the many new and dynamic dimensions which data communications technology adds to information processing capabilities. It is designed as an overview to orient the potential user in design aspects, hardware considerations, software organization and implementation. Emphasis is placed on reducing time and dollars expended to achieve specific levels of responsiveness.

C2.19.2.2. This course will discuss technical realities of data communication, highlighting those areas which are necessary to communicate knowledgeably with suppliers of hardware, software, and common carrier service. The logical choice of communication media, telephone and ADP interface problems, development of telecommunication specifications, evaluation of communication proposals, and operational problems are also discussed.

C2.19.3. Prerequisites. This course is designed for persons who have the responsibility for the architecture of terminal-oriented computer systems. This would include analysts, engineers, or functional area specialists who need to become acquainted with the equipment and techniques involved. It is desirable that enrollees have had a recent computer orientation.

C2.20. COMPUTER/MICROFILM INFORMATION SYSTEMS

C2.20.1. Civil Services Commission. A 3-day program to be conducted quarterly.

C2.20.2. Description

C2.20.2.1. This program will explore all major aspects in the development and implementation of an information system that uses computers and microfilm in combination.

C2.20.2.2. Attendance at this course will: familiarize students with the characteristics of microfilm; introduce them to computer-output-on-microfilm (COM); identify the components and characteristics of a computer/microfilm information system; and develop the criteria for determining the suitability of such a system for their information processing needs.

C2.20.3. Prerequisites. Information specialists, computer specialists, systems analysts, librarians, and other Federal, State and local government employees concerned with the possibility of using computers and microfilm together, at grade GS-7 and above (or equivalent) are eligible to attend this program. It is desirable for all participants to have a basic knowledge of operational information systems and of automatic data processing concepts. No prior knowledge of computer/microfilm technology will be assumed.

C2.21. CORRELATION AND REGRESSION ANALYSIS

C2.21.1. Civil Service Commission. A 5-day course.

C2.21.2. Description. This course concentrates on an analytic technique involving the findings of numerical relationships between groups of data and making predictions from these measurements. It is designed to enable a non-technical analyst or program manager to recognize problems that can be analyzed by the correlation and regression analysis technique, understand the computational methods involved, formulate problems in correct form for solution, and compute solutions to formulated problems.

C2.21.3. Prerequisites. Nominees should be involved in program management or analysis and should have knowledge of basic algebra and mathematical notation. There are no grade restrictions for attendance. Nominations are accepted for officials from Federal, State, and local governments, both in the United States and foreign countries.

C2.22. COST ESTIMATING TECHNIQUES

C2.22.1. Civil Service Commission. A 5-day course.

C2.22.2. Description. This course enables managers to develop a good understanding of the techniques that are used in determining costs of future programs. It provides practical methods for problem identification and insights into the application of cost projection techniques. The course also introduces the concepts and methods for identifying the true level of past, present, and future costs for such purposes as budgets, estimates of cost-to-complete programs, manpower needs, operating performance, and control of subcontracted activities.

C2.22.3. Prerequisites. This program is for Federal, State, and local government officials responsible for or influencing management decisions. There are no grade-level restrictions.

C2.23. PRODUCTIVITY ORIENTATION SEMINAR

C2.23.1. AMETA, Rock Island, Illinois. A 1-week course.

C2.23.2. Description

C2.23.2.1. This orientation seminar is designed to provide enrollees with the latest knowledge on methods useful in measuring and enhancing productivity in both product and service type organizations.

C2.23.2.2. This orientation seminar is concerned with the need, and the means for increasing productivity throughout all elements of the Federal sector. Consideration is given to the methods available to managers for increasing productivity in any operation. Attention is directed to the use of high-level performance measures in the traditional processes of workload programming, resource allocation, budgeting, and work planning and control systems. Emphasis is placed on the use of work methods and standards and the Productivity Program for productivity enhancement.

C2.23.2.3. Specific topics covered include: the history of performance measurement in the Government; concepts of effectiveness and efficiency; integration of work units, unit cost, productivity measurement, and work measurement; selection of performance measures; establishment of performance baselines; performance assessment and control; and effectiveness/efficiency tradeoffs. The use and role of job design techniques, capital investment, and work planning and control, are addressed as they relate to increased productivity in any organization.

C2.23.3. Prerequisites. This course is designed for functional managers responsible for initiating action to measure and enhance organizational productivity. Other applicants will be considered on an individual basis. This course is not for personnel who will be directly involved in the actual design and implementation of productivity measurement systems. Those individuals should consider the course, Productivity Measurement and Enhancement Methods (JT) 8D-F36.

C2.24. MANAGEMENT DEVELOPMENT SEMINAR

C2.24.1. Civil Service Commission. A 3-day course offered twice a year.

C2.24.2. Description

C2.24.2.1. This seminar is designed to help the participant enrich his working knowledge of the major functions and duties of management and to acquire the, skills and abilities necessary to perform his management tasks in a more effective manner. Attendance at this seminar is particularly appropriate for new managers and for experienced managers who have not had comparable training.

C2.24.2.2. This program is designed to build upon the specific knowledges, skills, and abilities acquired in local installation Basic Supervision programs or their equivalent. It is intended to ensure that the participants acquire improved management skills and to encourage their continuing development. Topics will include: the role and functions of the manager, including planning, organizing, leading and controlling; the technical, human, and conceptual skills of the manager; and the abilities of the manager, including problem solving, setting objectives, developing standards, communicating, and motivating. Emphasis will be on application of required knowledges, skills, and abilities in the person's management situation.

C2.24.3. Prerequisites. This seminar is designed for first- and second-level managers (managers of journeymen and other non-management personnel) and above who possess a basic knowledge of management practices and policies, or who have been identified as having high potential for advancement. This course should be taken by all new managers prior to or as soon as possible after appointment to a management position; experienced first- and second-level managers who have not had comparable training would benefit by participation.

C2.25. SEMINAR ON MODERN MANAGEMENT THEORIES

C2.25.1. Civil Service Commission. A 3-day course offered twice a year.

C2.25.2. Description. This course will provide an overview of management thought and research of the past 25 years. Lectures and discussions will focus on the work and writings of such influential writers as Maslow, McGregor, Likert, Herzberg, Drucker, Odiorne, Fiedler, Reddin, and Downs. These will be used to illustrate recent findings in the area of motivation, communication, leadership; etc., to review the concept of "management by objectives," and to introduce the "systems concept" of management and organization development. Emphasis will be on the practical application of these theories to the work situation of the Government manager. The seminar will be limited to 30 participants.

C2.25.3. Prerequisites. All persons appointed from the Management Intern register of the PACE Examination are eligible for nomination. In addition, all employees participating in an Agency intern program at the management-entry level are eligible, regardless of whether or not appointed from the Management Intern register. Other employees, GS-5 through GS-9 or equivalent, may be nominated provided the individual is being developed for assumption of management responsibilities.

C3. CHAPTER 3

COURSE DESCRIPTIONS
INTERMEDIATE LEVEL

Table C3.T1. Index

C3.1. DEFENSE WORK MEASUREMENT STANDARD TIME DATA

C3.1.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.1.2. Description

C3.1.2.1. This course is designed to provide enrollees with a working knowledge of the Defense Work Measurement Standard Time Data Program (DWMSTDP) with emphasis on the uniform application of the standard time data elements included in the Program. In addition, the course provides the enrollee with knowledge of the latest techniques of work measurement for the development of standard time data.

C3.1.2.2. Course content provides an in-depth coverage of the Defense Work Measurement Standard Time Data Program. Topics include the coding structures, source and location of various levels of data, element descriptions, time values, quality of data and selection of universal and occupation related data. Emphasis is placed on enrollees application of the data in developing labor performance standards. The course includes methodology for the application of data from the applicable DWMSTDP volumes. In addition, the course treats the development of new and supplemental standard time data using various work measurement and data presentation techniques in order to fill voids in the DoD data bank and to develop unique/specific data coverage.

C3.1.3. Prerequisites. This course is designed for methods and standards supervisors, analysts/technicians, and planner estimators actively engaged in applying labor performance standards and possessing basic knowledge in the methods and standards development area. Experience has shown that satisfactory performance in this course is enhanced by a review of basic work methods and standards techniques prior to attendance.

C3.2. STATISTICAL INFERENCE (JT) 8D-F32

C3.2.1. AMETA, Rock Island, Illinois. A 3-week course.

C3.2.2. Description

C3.2.2.1. To provide the enrollee with knowledge of the concepts and techniques of statistical inference, statistical estimation and tests of hypothesis, and the fundamental knowledge of probability and statistic's essential to these concepts and techniques. These techniques have application in the data collection, analysis, and interpretation activities associated with a wide variety of functional areas such as research, engineering, management science, operations research, testing of materials, and/or product, etc.

C3.2.2.2. Probability and statistical concepts, probability distributions, inference under risk, Bernoulli experiments, Poisson processes, distribution-free methods of statistical analysis, sequential tests of hypotheses, Bayesian confidence intervals.

C3.2.3. Prerequisites. This course is designed for engineers, scientists, management scientists, behavioral scientists, operations research analysts, mathematicians, reliability and maintainability engineers, quality engineers, economists and others engaged in statistical analysis activities. The enrollee need not have previous statistical training, but must have completed formal mathematics training through integral calculus.

C3.3. STATISTICAL TECHNIQUES FOR ANALYSIS

C3.3.1. Civil Service Commission. A 4-day course.

C3.3.2. Description. This survey course examines basic principles, underlying logic, and practical uses of statistical techniques in analysis. Particular attention is focused on:

C3.3.2.1. Quantification of problems;

C3.3.2.2. Probability and risk;

C3.3.2.3. Sampling;

C3.3.2.4. Quality control; and

C3.3.2.5. Correlation and analysis.

C3.3.2.6. Lecture and case method approach is used to relate theory to real-world applications.

C3.3.3. Prerequisites. This program is primarily intended for newly assigned analysts, GS-9 and above or equivalent, whose work assignments (current or anticipated) involves the use of statistics and who are seeking a practical review of fundamentals.

C3.4. NEW DIRECTIONS IN ENGINEERING MANAGEMENT TECHNOLOGY

C3.4.1. AMETA, Rock Island, Illinois. A 1-week course.

C3.4.2. Description

C3.4.2.1. This orientation seminar is designed to provide enrollees with an introduction to the latest developments in engineering/management technology and the impact of recent technical advances on engineering effort.

C3.4.2.2. Engineering managers are provided a perspective of the recent accomplishments in engineering/management technology. Emphasis is placed on general philosophy and practical applications rather than on abstract theory. Typical topics include: productivity measurement of engineering functions; applications of economic analysis to engineering problems; design to unit production cost methods; impact of computer-aided manufacturing techniques on engineering; applicability of operations research to engineering (e.g., simulation and risk analysis), and designing for producibility; and the impact and role of computer aided design in engineering. Additional topics will be included as they prove their usefulness in the engineering management sphere.

C3.4.3. Prerequisites. This course is designed for current and potential managers of engineering effort and senior engineers who require a basic understanding of the recent developments in engineering/management technology. It is suggested that priority be given to military personnel O-4 and above and civilians GS-12 and above.

C3.5. SEMINAR ON ADP IN TECHNICAL INFORMATION SYSTEMS

C3.5.1. Civil Service Commission. A 3-day program to be conducted once a year.

C3.5.2. Description. This seminar is designed to present an overview of the applications of data processing techniques to various aspects of storage and retrieval of information; and to discuss the important criteria for the design, analysis and evaluation of an automated technical information system. Attendance at this seminar prepares the individual for participation in the other information processing courses offered by the Civil Service Commission.

C3.5.3. Prerequisites. Information specialists, librarians, archivists, and other Federal, State and local government employees concerned with the storage and retrieval of technical data, GS-9 and above (or equivalent), are eligible for nomination. Prior attendance at a Management Introduction to ADP course or corresponding knowledge is recommended.

C3.6. DEFENSE DATA MANAGEMENT PPM 370 (JT)

C3.6.1. AFITSL, Wright-Patterson Air Force Base, Ohio. Ten-class day course.

C3.6.2. Description

C3.6.2.1. To increase the management effectiveness of those persons involved in policy formulation or the implementation of the data management system procedures. It is designed to educate DoD personnel in the principles, policies, and procedures for improved management of data and documentation associated with the acquisition of military material, systems, supplies and services.

C3.6.2.2. The course is primarily concerned with the management of all data and information contractually acquired from industry. The framework of the course is based on the data management policies and procedures prescribed in DoD, Air Force, Amy, Navy and DLA directives and/or regulations. The course starts with an orientation on DoD data management interests and policies. Following this introduction, the course identifies the functions of data users and their data needs to the data management officer; e.g., provisioning, technical manuals specifications, maintainability/reliability; etc. In addition, details directly concerning the data management function are presented; e.g., rights in data, reprocurement data, Defense Department Form 1423, Authorized Data List, storage and retrieval systems; etc. The last portion of the course is directed toward the data management organization, policies, and procedures of the Military Departments and the Defense Logistics Agency. Teaching methods include lectures, workshop, and seminars.

C3.6.3. Prerequisites. Students should have actual or anticipated assignment to a responsible management position where integrated data management is a concern. Individuals nominated must have demonstrated high potential for managerial development and must possess actual on-the-job experience in some phase of data management. Grade level: Commissioned Officer, or GS-9 and above.

C3.6.4. Security Clearance. None.

C3.7. DIRECTIVES IMPROVEMENT

C3.7.1. General Services Administration. A 2-day workshop scheduled to meet Agency demand.

C3.7.2. Description. This workshop is designed to improve the communication of policy, procedures, and instructions in the clearest, most effective manner. It concentrates on the areas of directives planning, organizing, writing, illustrating, and editing.

C3.7.3. Prerequisites. Management analysts, persons who will be serving as instructors, or those who manage directives systems are eligible.

C3.7.4. How to Make Nominations. Nominations should be submitted through Agency employee development officers to the Workshop Director, National Archives and Records Service (NRI), General Services Administration, Washington, DC 20408, using Optional Form 37, "Nomination for Interagency Training."

C3.7.5. Other Information. Specific dates and locations will be announced. Agencies may obtain additional information by calling area code (202) 963-4425 or code 13, extension-34425.

C3.8. SURVEY OF DATA ENTRY/COMPUTER OUTPUT DEVICES

C3.8.1. Civil Service Commission. A 3-day program to be conducted once a year.

C3.8.2. Description. This 3-day course will present background information on input and output media and devices and their effect on the total system. The evolution of equipment from the original punch card and paper tape devices to current "intelligent terminals" will be discussed.

C3.8.3. Course Outline

C3.8.3.1. Historical Perspective.

C3.8.3.2. System Design Considerations.

C3.8.3.3. Equipment Considerations.

C3.8.3.4. Advantages and Disadvantages of Each Input/Output Device and Medium.

C3.8.3.5. Applications of Various Devices.

C3.8.3.6. Latest Developments in Input and Output Devices.

C3.8.3.7. The Future.

C3.8.4. Prerequisites. Computer system analysts, programmers, computer specialists, and others with an interest in input/output problems and solutions are eligible for nomination.

C3.9. ORGANIZATION PLANNING (JT) 7A-F8

C3.9.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.9.2. Description

C3.9.2.1. This is a basic technique course designed to provide enrollees with a principles and techniques of systematic knowledge of practical concepts organization planning and design. The enrollees will learn to design an organization structure appropriate to its purpose, its internal conditions, and its environment.

C3.9.2.2. Drawing on research in the behavioral sciences, recognizing the impact of rapid change in contemporary work operations, and blending traditional and modern organization concepts the student develops the facility to analyze and create organization structures and relationships. Subjects include motivation and organization development, setting objectives for the organization, the nature and effect of alternative organizational arrangements from basic functional through complex matrix structures, staff and support activities, analysis of roles and relationships, implementation of change, and assessment of organizational effectiveness. A significant portion of class time is devoted to realistic case problems that are analyzed and improved to permit application of techniques by the class attendees.

C3.9.3. Prerequisites. This course is designed for personnel who perform organization studies or whose general duties require a working knowledge of organization planning. It is essential in the development program of a management analyst. The candidate should have had job experiences relating to organization and management work that will facilitate the comprehension and application of organization planning techniques.

C3.10. FINANCIAL PLANNING AND CONTROL TECHNIQUES

C3.10.1. AMETA, Rock Island, Illinois. A 1-week course.

C3.10.2. Description

C3.10.2.1. This course is designed to improve the financial management ability of operating and staff personnel who are responsible for analysis and decision making regarding resource utilization and allocation. The course provides the enrollee with an awareness of Federal Government financial practices in order to improve the ability to manage resources more effectively.

C3.10.2.2. Course topics relate the national economy, Federal budget, and financial planning and control processes to the involvement of the typical functional manager. Financial management concepts, techniques, principles, and practices are studied and discussed in relation to the responsibilities of an operating manager. Federal financial management, as part of the national economy and as a separate financial system, is discussed to provide the enrollee with the background, depth of understanding, and general knowledge necessary to effectively analyze and manage the organization's financial resources.

C3.10.3. Prerequisites. This course is designed for operating and staff personnel responsible for the effective use of financial resources who have a equipment to relate financial resource information to other resources; i.e., manpower, equipment and material. This course is designed for operating personnel responsible for resource utilization, rather than for finance and accounting personnel. Preference for attendance will be given to personnel GS-11, their equivalents, and above.

C3.11. MANAGEMENT SCIENCES ORIENTATION

C3.11.1. Civil Service Commission. A 3-day course.

C3.11.2. Description. This program provides a general overview of the classes of techniques of analysis known as the management sciences. Emphasis is placed on the role of the analyst in supporting management decision-making through quantitative analysis. Subjects include: principal and commonly used techniques of operations research, systems analysis, and cost/benefit analysis. At the conclusion of the orientation, participants should:

C3.11.2.1. Have an increased appreciation of the uses of the management sciences;

C3.11.2.2. Understand the major steps involved in the application of methods and techniques of analysis;

C3.11.2.3. Recognize more clearly the role of individuals responsible for contributing informational inputs to management; and

C3.11.2.4. Communicate more effectively through an increased knowledge of terminology and meanings.

C3.11.2.5. A follow-up program, "Selected Techniques for Operations Analysis," is offered for those persons seeking more intensive treatment of the subject.

C3.11.3. Prerequisites. This program is open to any career employee who would benefit from a familiarity with and appreciation for random sampling as a means for obtaining useful information. It is particularly recommended for contract officers, management analysts, financial managers, personnel socialists, and other professionals who are users of statistical products.

C3.12. SELECTED TECHNIQUES FOR OPERATIONS ANALYSIS

C3.12.1. Civil Service Commission. A 5-day course.

C3.12.2. Description. This course provides a practical understanding of such basic operations research techniques as: inventory theory, replacement theory, queuing theory, simulation, cost-benefit analysis, linear and dynamic programming, and game theory. Lectures, case studies, group discussion, and homework assignments are used extensively throughout this workshop. Upon completion, the participant should be able to:

C3.12.2.1. Recognize more readily the type and range of operational problems amenable to mathematical approaches;

C3.12.2.2. Understand more, fully the mathematical rules and computational logic employed by operation research analysts; and

C3.12.2.3. Appreciate more the various methods used for recording and analyzing data in mathematical problem solving.

C3.12.3. Prerequisites. This course is open to Federal, State, and local government employees. It is particularly directed at persons who perform or will perform quantitative analyses of operations problems for management or who are responsible for the supervision of such efforts. The program presumes familiarity with operations research concepts on the part of the participant. An understanding of basic algebra is essential to effective participation and understanding of the practical exercises.

C3.13. CAPITAL MANAGEMENT FOR GOVERNMENT

C3.13.1. Civil Service Commission. A 4-day course.

C3.13.2. Description. This course teaches managers, analysts, and others how to: identify the capital costs associated with organizational products; analyze the potential of capital investment and reorganization of the work process as methods of improving organizational productivity; forecast near and long-term productivity gains related to use of capital; and develop and use unit cost measures to justify capital investments. Participants will gain an understanding of the concepts of capital management and experience in applying these concepts in case studies and work exercises during the course. The following general topics will be covered during the course:

C3.13.2.1. Relationship between output and Agency objectives;

C3.13.2.2. Use of financing techniques such as lease contract and revolving fund to increase the supply of available capital equipment;

C3.13.2.3. Use of technology and systems to produce and distribute Government services;

C3.13.2.4. Relationships between job enrichment, capital investment, and unit cost;

C3.13.2.5. Meaning and uses of productivity measures for capital budgeting; and

C3.13.2.6. Forecasting short and long run productivity changes.

C3.13.3. Prerequisites. This program is for Federal, State, and local government officials who make or influence decisions about capital investment, leasing, maintenance, renovating or disposition. There are no grade restrictions.

C3.14. COST BENEFIT WORKSHOP

C3.14.1. Civil Service Commission. A 5-day course.

C3.14.2. Description. This course covers the basics of cost benefit analysis. Several case exercises are covered during the course. Topics covered are: the setting for analysis; problem formulation and systems identification; the process of analysis; criteria problems and output measures; model building and use; present value, discounting, and other time problems in analysis; cost and benefit identification and calculation; standards for reviewing analysis; and the economics of public program analysis.

C3.14.3. Prerequisites. This course is for Federal, State and local government officials who are:

C3.14.3.1. Beginners in analysis involving cost benefit calculations;

C3.14.3.2. Managers for whom a working knowledge of the techniques of analysis is important;

C3.14.3.3. Program managers; and

C3.14.3.4. Those who review cost-benefit studies.

C3.14.3.5. There are no grade level restrictions; however, nominees at GS-9 and below or the equivalent will be considered on an individual basis.

C3.15. WORK DESIGN

C3.15.1. Civil Service Commission. A 5-day course.

C3.15.2. Description. This course teaches a methodology or a program of specific steps that may be used for designing or redesigning a specific system for a specific situation. This methodology is the ten-step strategy known as the IDEALS concept. IDEALS is an acronym for Ideal Design of Effective and Logical Systems. The concept is offered as a proven methodology that eliminates much unnecessary research and that avoids many of the mental blocks generated by apparent, but unintended criticism implied in many analytic approaches.

C3.15.3. Prerequisites. This course is for management analysts, program managers, personnel specialists, industrial engineers, supervisors of service-producing units and others concerned with efficient and effective program management.

C3.16. WORK PLANNING AND CONTROL SYSTEMS

C3.16.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.16.2. Description

C3.16.2.1. This course is designed to provide the enrollee with a knowledge of the principles and fundamentals of sound work planning and control systems.

C3.16.2.2. The importance and relationships of the following work planning and control functions are discussed: forecasting, job acceptance, product planning, process planning, time estimating, general resource planning, scheduling and loading, and various aspects of control. Major emphasis is placed on relating these functions by informational links so that the work planning and control activities perform as an effective information system. A number of specialized techniques are presented. These include statistical forecast control, line-of-balance, network-based management techniques, value engineering, work measurement, break-even analysis, economic order quantity determination, and computer applications in work planning and control. Each student is required to write a course paper relating subject matter to his/her own work environment.

C3.16.3. Prerequisites

C3.16.3.1. This course is designed for personnel requiring training in the design or operation of sound work planning and control systems in all types of installations and activities. Training in work planning and control operations would be useful for industrial engineers, management analysts planners, estimators, schedulers, supervisors, branch chiefs, and division chiefs.

C3.16.3.2. Experience has shown that proficiency in the use of fundamental algebraic techniques and mathematical symbols is desirable.

C3.17. MANAGEMENT INTRODUCTION TO ADP

C3.17.1. Civil Service Commission. A 3-day seminar scheduled approximately every 6 weeks.

C3.17.2. Description. This seminar is designed to provide a management overview of the fundamentals of automatic data processing. It is also the recommended introductory course for participants planning to attend later ADP seminars (in personnel management, law enforcement, financial management, the law, supply management, medicine, and technical information systems). The following topics will be discussed:

C3.17.2.1. ADP overview;

C3.17.2.2. Capabilities and components of computers;

C3.17.2.3. Introduction to ADP programming;

C3.17.2.4. Planning and preparing for a computer;

C3.17.2.5. ADP systems analysis and design;

C3.17.2.6. Computer applications;

C3.17.2.7. Economics of ADP; and

C3.17.2.8. Computer-related middle management considerations.

C3.17.2.9. Technical aspects of automatic data processing will be presented, but only on an introductory level. Lack of prior participant familiarity with computer technology is assumed.

C3.17.3. Prerequisites. This program is open to all Federal, State, and local government employees, GS-11 and above or equivalent.

C3.18. AUTOMATIC DATA PROCESSING ORIENTATION SEMINAR

C3.18.1. AMETA, Rock Island, Illinois. A 1-week course.

C3.18.2. Description

C3.18.2.1. This course is designed to provide managers, functional specialists, and other users of computers with the principles of computer data processing and how the management process can be facilitated through the use of computer-based information systems. Upon completion of this training, the attendee will know the functions of a computer as it processes business data to produce information for improved management. He will understand the participative role of the user during the development of the computer-based information system and the basic considerations during systems design.

C3.18.2.2. Computer principles will be presented so that specific functions of input, storage, control, and output are understood as it occurs during computer data processing. Management Information Systems (MIS) concepts and goals will be explained as it relates to the mission of the organization, including consideration of the database design to support the systems information objectives. Details of systems analysis techniques and computer program development will be presented to the degree necessary for the user of computer products to understand what must be done to satisfy an information requirement. The computer center will be discussed to identify the functions it performs in processing data for the user and in controlling the data base for the manager. Computer systems management will include a listing of steps, work processes, relationships, and considerations that must be made during the accomplishment of a computer automation project.

C3.18.3. Prerequisites. This course is designed for functional specialists and middle and top managers having the rank of Captain (O-3) or civilian GS-9 and above. Trainees who require this course as a prerequisite for further training or career development, but do not meet the grade requirement, may be permitted to attend. Candidates should be from organizations that are potential or current users of ADP and have a need for this training in their work assignments. No knowledge of electronics or any special preparation in mathematics is necessary.

C3.19. ADP SYSTEMS ANALYSIS AND DESIGN (JT) 7E-F18

C3.19.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.19.2. Description

C3.19.2.1. This course is designed to provide a knowledge of the basic analysis and design techniques as applied to computer-based data processing systems. The objective is to equip the enrollee to assist in the development of a system that will be consistent with the potentials of the computer and management needs.

C3.19.2.2. Topics include a brief review of computer systems characteristics, an orientation in systems work, and detailed explanation of the use of tools and techniques for the detailed fact gathering, analysis, synthesis, and design of computer applications for integrated management information systems. The techniques of flow charting, grid charting document relationships, analyzing the importance and redundancy of data, constructing decision tables, and designing records and files for sequential and direct-access computer systems are presented.

C3.19.2.3. Learning involves group-centered and individual application of the techniques presented. A substantial portion of course time is spent on case problems applying the various detailed techniques and methods of systems analysis and design.

C3.19.3. Prerequisites. This course is designed for military and civilian personnel preparing for and participating in systems evaluations, profitability, and application studies for automatic data processing. The enrollee must have attended the 40-hour Automatic Data Processing Orientation Seminar at USAMETA or have equivalent understanding of ADP concepts by attendance at another 40-hour introductory ADP course. Personnel having only electric accounting machine experience should be enrolled in the Automatic Data Processing Orientation Seminar before taking this course. Preference for attendance is given to personnel GS-9 (or military equivalent) and above.

C3.20. PLANNING AND CONDUCTING MANAGEMENT AUDITS AND STUDIES

C3.20.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.20.2. Description

C3.20.2.1. This course is designed to provide the enrollees with the capability to plan and conduct management audits and studies for the purpose of analyzing and solving management problems and improving the utilization of resources within their organizations.

C3.20.2.2. Major topics include the nature and scope of management audits and studies, developing the plan of action, techniques for data collection and analysis, methods in developing alternative solutions, and preparing and presenting recommendations. There is also a review of analytical tools and techniques, such as system analysis, organization analysis, economic analysis, and use of management sciences. Techniques for the analysis and synthesis of study data, development of study proposals, and implementation plans are presented. Learning will involve group-centered as well as individual applications of the approach to conducting a management study and the techniques presented. A substantial portion of the course will be devoted to developing a management study plan and simulating its conduct from establishing the objectives to presenting recommendations.

C3.20.3. Prerequisites. This course is designed for military and civilian personnel preparing for or participating in various types of management audits or studies of an organization or systems nature. Personnel with a grade level of GS-11 or equivalent, and above, will be given preference for attendance. Candidates for this course should have had a least 1 year of experience by participation in analytical studies of management operations.

C3.21. HUMAN BEHAVIOR IN ORGANIZATIONS

C3.21.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.21.2. Description

C3.21.2.1. This course is designed to provide an understanding and working knowledge of the principles and applications of the behavioral sciences so that they can be applied to increase individual effectiveness and group performance in organizational settings.

C3.21.2.2. Motivation and learning theories, principles of interpersonal communication, individual behavior and group dynamics, among other pertinent behavioral science topics are discussed with particular emphasis on their utility in improving the effectiveness of organizational performance. The behavioral science implications on cost reduction, productivity improvement, labor-management relations, equal employment opportunity, and other management programs will be discussed during the course. Individual and group exercises are utilized to clarify and refine understanding.

C3.21.3. Prerequisites. This course is designed for both line and staff personnel who are or will be engaged in management improvement activities. It is essential in the development program of a management analyst. The candidate should have had job experience that will facilitate the comprehension and application of behavioral science techniques in the management environment. Preference for attendance will be given to personnel GS-11 (their equivalents) and above.

C3.22. MANAGEMENT OF MANAGERS COURSE

C3.22.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.22.2. Description

C3.22.2.1. This course is designed to assist in the development and refinement of those special capabilities required for intermediate-level managers those who manage other managers and supervisors. It is also designed to broaden and increase the individual's understanding of the functional interdependence of the opponents of the organization. It is intended that a participant will learn how to get things done through other people.

C3.22.2.2. The course content is pointed toward deepening the manager's knowledge and understanding of alternate modes of behavior appropriate in the supervision of managers, the development of those special capabilities required at that level of management, and the broadening of the manager's knowledge and understanding of the management systems, programs, and internal and external environment of the Government. The importance and interdependence of the above are highlighted through the use of case examples and simulations. Specific topics include: the role and functions of the intermediate-level Federal manager; managing by objectives; operational planning and control; productivity concepts and measurement; leadership skills; managerial uses of authority, influence and power; group dynamics and team building; employee selection and development (interviewing, coaching, and counseling); labor-management relations; the systems approach, environmental forces; economic analysis and program evaluation; and decision making. The course will include evening sessions and weekend assignments.

C3.22.3. Prerequisites. This course is designed for intermediate-level managers (i.e., managers of managers or staff equivalents). This would normally include division chiefs and their deputies at the depot/arsenal/installation level, office and division chiefs at the major subordinate command level, and branch and section chiefs at the Command, Department, and Agency levels. The above positions are typically at the O-4/GS-13 through O-6/GS-15 levels. This course should be taken by all new intermediate managers plus or minus 6 months from the time they take their positions. Experienced intermediate managers who have not had comparable training would also benefit by participation.

C3.23. PRINCIPLES AND APPLICATIONS OF VALUE ENGINEERING

C3.23.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.23.2. Description

C3.23.2.1. This course is designed to provide the enrollee with a working knowledge of the principles and techniques of value engineering (VE) and their application to current value engineering projects.

C3.23.2.2. Course content includes value engineering methodology; the application of value engineering in the design process considering both hardware and software applications; relationship to life-cycle costing, design-to cost, and value engineering program management. An overview of contractual provisions are presented as they relate to the total VE process. Emphasis is placed on class exercises and case studies in which VE methodology is applied to current real-world projects.

C3.23.3. Prerequisites. This course is designed for engineers and technical specialists. Personnel chosen to attend this course should have had experience in one or more of the following areas: research and development, design engineering, product engineering, industrial engineering, production, maintenance engineering, quality and reliability, and equipment specialist. Personnel from other areas will be considered on an individual basis.

C3.24. SYSTEM ENGINEERING

C3.24.1. AMETA, Rock Island, Illinois. A 2-week course.

C3.24.2. Description

C3.24.2.1. This course is designed to provide the enrollee with a working knowledge of system engineering theory, procedures, and managerial practice to ensure that the definition and design of the system or equipment achieves the required effectiveness at minimal unit production and life-cycle costs within the required schedule at well-defined risk. Emphasis is placed on:

C3.24.2.1.1. Using the system engineering process as a methodical, analytical approach to the development of total systems; and

C3.24.2.1.2. Examining the functions of system engineering management.

C3.24.2.2. This course covers each of the steps of the system engineering process: functional analysis, synthesis, evaluation and decision, and description of the elements. Also covered is system engineering management, which includes the management of the system engineering process itself, planning and control of technical aspects of the system/project from receipt of the document specifying the need for a new system or material item through delivery of the system or item to the operational inventory and its eventual obsolescence.

C3.24.2.3. Other topics specifically discussed are: functional flow block diagram (FFBD), requirements allocation sheet (RAS), time requirements analysis, work breakdown structure (WBS), System Engineering Management Plan (SEMP), and the relationship of system engineering to Configuration Management, Integrated Logistics Support, Cost Schedule and Control, Technical Performance Measurement, and Design to Unit Production Cost. Enrollees learn to apply system engineering procedures through the use of practical exercises and case studies.

C3.24.3. Prerequisites. This course is designed for personnel concerned with the conception, development, acquisition, fielding, and modification of material systems and end items. Attendees should be involved in the process of transforming an operational need into a description of system performance parameters and a system configuration or involved in the management process of coordinating the engineering and technical effort within a project or program. Experience in one or more of the following areas: research and development, engineering, production, procurement, and project control is desirable.

C3.25. EFFECTIVE BRIEFING TECHNIQUES

C3.25.1. Civil Service Commission. A 5-day course to be offered eight times each year.

C3.25.2. Description. This course is designed for individuals who give briefings. Through video tape presentations, participatants are encouraged to objectively appraise their own oral presentations. The course places emphasis on obtaining the desired audience reaction. Topics include: how we communicate, how to avoid communication problems, how to prepare and deliver briefings, how to analyze the audience, and how to prepare visual aids.

C3.25.3. Prerequisites. Those Federal, State, and local government employees who brief higher-level officials, colleagues, or subordinates may be nominated for this course.

C3.26. MODERNIZING MANAGEMENT REPORTS

C3.26.1. General Services Administration. Five half-day sessions, scheduled to meet Agency demand.

C3.26.2. Description. This is a comprehensive workshop that concerns the continuing need for better management information and reporting. The workshop focuses on management information requirements. It demonstrates and develops ways to get the desired information at the right time through the clearest possible communication. It stresses how to stop unneeded reporting to achieve the lowest possible cost. Case histories illustrate application of the workshop techniques. Participants, working in groups, consider real or theoretical problems of their Agencies. Groups of four registrants from a single Agency provide the most effective pattern to study practical problems.

C3.26.3. Prerequisites. Management analysts, reports managers, and others having managerial responsibilities relating to development, preparation, or utilization of reports are eligible.

C3.26.4. How to Make Nominations. Nominations should be submitted through Agency employee development officers to the Workshop Director, National Archives and Records Service (NRI), General Services Administration, Washington, DC 20408, using Optional Form 37, "Nomination for Interagency Training."

C3.26.5. Other Information. Agencies may obtain additional information by calling area code (202) 963-4425, or code 13, extension 34425.

C3.27. MANAGEMENT OF DEFENSE ACQUISITION CONTRACTS

C3.27.1. ALMC, Fort Lee, Virginia. A 4-week course.

C3.27.2. Description

C3.27.2.1. To provide basic procurement training to military and civilian personnel who are currently serving in or anticipate assignment to positions in which they will engage in DoD procurement functions.

C3.27.2.2. This general survey course provides a detailed study of procurement procedures as prescribed by status, ASPR, and other directives that govern DoD procurement operations. This course is designed for personnel entering the field of DoD procurement or for those with 1 to 3 years of procurement experience.

C3.27.3. Prerequisites. All nominees for resident, on-site and accredited off-campus instruction mode classes should have a current or an immediately impending assignment in contracting and be within the first 3 years of employment in this field. When demand for a class exceeds available space, eligible nominees requiring the course under the mandatory training provisions of a DoD career development program or under an official Service Agency-wide intern training program will be given first consideration. To be eligible for this course, nominees must fall in one of the following categories: military officers, warrant officers, civilians in grade GS-7 and above, or official procurement interns in grade GS-5 and above. (Enlisted personnel in grades E-7 and higher who meet the criterion cited above may be accepted on a case-by-case-basis). All other persons desiring the course in these modes should submit with their applications a request for a waiver of eligibility requirements supported by full justification. There are no prerequisites for enrollment in the correspondence mode.

C3.28. DEFENSE INVENTORY MANAGEMENT

C3.28.1. ALMC, Fort Lee, Virginia. A 5-week course.

C3.28.2. Description

C3.28.2.1. To develop and increase the understanding of officer and civilian managers of DoD Agencies in the management of material inventories. Management principles, techniques, and concepts are emphasized rather than procedural details. Inventory management is related to the life-cycle management of materiel. The course focuses on the item manager at the inventory control point. Emphasis is placed on developing ability to formulate sound inventory management decisions based on logical analysis of existing data.

C3.28.2.2. The course concentrates on material management functions. The subjects covered range through the entire life cycle of material from the entry of new items into the DoD inventory to ultimate disposal of surplus material. Special emphasis is placed on requirements planning and computation for the various categories of items through such tools as financial management, standardization, modernization, economic inventory principles, and automated data systems. Mathematics, scientific techniques, and logistical terminology are presented to the degree required to provide a common basis for understanding requirements computation and inventory management problems. The application of management skills and practices, problem-solving and decision-making techniques appear throughout the course, emphasizing their importance to management.

C3.28.3. Prerequisites. All student nominees (military and civilian) should have an inventory management position. Military personnel should be limited to officers and warrant officers, and non-commissioned officers who are members in the NCO logistics program. Applicants should have a working knowledge of mathematics through basic algebra.

C4. CHAPTER 12

COURSE DESCRIPTIONS
ADVANCED LEVEL

Table C4.T1. Index

C4.1. PROJECT PLANNING AND CONTROL TECHNIQUES

C4.1.1. AMETA, Rock Island, Illinois. A 2-week course.

C4.1.2. Description

C4.1.2.1. This course is, designed to provide knowledge of the latest concepts and techniques used in planning and controlling projects and to improve skills in selecting techniques and applying them to real-life situations.

C4.1.2.2. The concepts and techniques presented in this course provide a systematic approach to planning and controlling cost, schedule, and technical performance. The methods used to obtain products or services from contractors and supporting in-house organizations are also discussed. Primary emphasis is toward medium to large-size projects, in terms of either complexity or cost. In order to relate techniques to real-life situations, ample use is made of exercises, projects, and case studies. The techniques presented include: Network-Based Management Techniques (e.g., PERT and CPM); requirements determination; cost estimating; economic analysis; risk analysis, work breakdown structures; long-range and detailed cost, schedule, and technical performance planning; criteria approach to cost and schedule control; design impact on costs; configuration management; contracting; data and systems management; and technical performance measurement. All topics are related to the project life-cycle concept that are most likely under project management.

C4.1.3. Prerequisites. This course is designed for those whose assignments are or will be involved with the management of medium to large-scale projects, either in a direct or supporting role. Individuals chosen to attend would include: program/project action officers and engineers, systems or management analysts, program or budget analysts, and contracting specialists. Those personnel selected for attendance from activities that support project management should be directly related to these support efforts. Other applicants will be considered on an individual basis.

C4.2. MANAGING WITH CONTRACTOR PERFORMANCE MEASUREMENT DATA

C4.2.1. AMETA, Rock Island, Illinois. A 2-week course.

C4.2.2. Description

C4.2.2.1. This course is designed to provide the skills necessary to effectively obtain, analyze, and use performance measurement data in the management of the materiel acquisition process for weapon/equipment systems.

C4.2.2.2. An explanation of the need for cost, schedule, and technical performance measurement, their integration, and examples of problems that exist due to the lack of performance measurement are discussed. In addition, the means for selecting, obtaining, and using performance measurement data are explained. The "use of data" portion of the course interprets data provided by either a contractor or Government organization whose management system has been accepted under the provisions of the Cost/Schedule Control System (C/SCSC) outlined in DoD Instruction 7000.2. Case studies and guest speakers are utilized to relate course material to real-life situations. Major emphasis is directed towards the validation, full-scale development and production phases of the materiel acquisition life-cycle process -- those most likely to be project or product managed.

C4.2.3. Prerequisites. This course is designed for managers and analysts in project/product management offices or those whose responsibilities include the support of project/product management offices in the interpretation of cost, schedule, and technical performance measurement data, and projecting trends and making decisions based thereon. This includes project managers, their deputies, program officers, and program and management analysts in supporting functional organizations.

C4.3. PRODUCTIVITY MEASUREMENT AND ENHANCEMENT METHODS

C4.3.1. AMETA, Rock Island, Illinois. A 2-week course.

C4.3.2. Description

C4.3.2.1. This course is, designed to provide the enrollee with the skills necessary for measuring the enhancing productivity in both the product and the service type organizations. Specific topics covered are:

C4.3.2.1.1. Efficiency and effectiveness measurement.

C4.3.2.1.2. Productivity indicators.

C4.3.2.1.3. Productivity planning and control.

C4.3.2.1.4. Labor productivity measurement.

C4.3.2.1.5. Productivity enhancing capital investment.

C4.3.2.1.6. Productivity enhancing methods.

C4.3.2.1.7. Job enrichment.

C4.3.2.2. The enrollee is presented a definitive concept of productivity and related performance measurement systems. Topics typically covered include: concepts of effectiveness and efficiency; integration of work unit, unit cost, and productivity measurements; selection and computation of performance measures; integration of detailed and summary-level performance measures; establishment of performance baselines, integration of performance measures into the management processes of workload programming, resource allocation, budgeting, and work planning and control systems; performance assessment, trend analysis, input/output analysis, status determination, forecasting; and auditing of performance measurement systems. Specific techniques useful for establishing performance indicators are addressed. These include: multiple-correlation and regression analysis, parametric estimating, linear programming, standard data systems, work measurement techniques, and indirect staffing analysis.

C4.3.2.3. Consideration is also given to a variety of productivity enhancement methods. Typical subjects covered are: capital investment analysis, job design, standard unit costs, methods and procedures studies, employee motivation and work planning and control systems.

C4.3.3. Prerequisites. This course is designed for staff analysts assigned the responsibility for designing and implementing productivity measurement and enhancement systems. Typical enrollees would include industrial engineers, management analysts, and manpower and budget specialists who have a responsibility for assessing the utilization of resources.

NOTE: This is not a course in basic work measurement for the development of detailed standards.

C4.4. STATISTICAL ANALYSIS AND DESIGNED EXPERIMENTS

C4.4.1. AMETA, Rock Island, Illinois. A 3-week course.

C4.4.2. Description

C4.4.2.1. To provide the enrollee with a working knowledge of the concepts and techniques of designing and analyzing statistical experiments. Topics covered include correlation and regression, statistical designs, analysis of variance, and methods for determining optimum conditions. These techniques have application in the data collection, analysis, and interpretation activities associated with a wide variety of functional areas, such as research, engineering, management science, operations research, testing of materials and/or products; etc.

C4.4.2.2. Review of statistical inference, correlation and regression, basic experimental designs, analysis of variance techniques, factorial experiments, randomized blocks, latin squares, youden squares, nested designs, crossed designs, mixed models and design analysis of covariance, introduction to response surfaces, and evolutionary operations nonparametric tests on parameters of other than normal distribution.

C4.4.3. Prerequisites. The course is designed for engineers, scientists, management scientists, behavioral scientists, operations research analysts, mathematicians, reliability and maintainability engineers, quality engineers, economists, and others engaged in statistical analysis activities. The enrollee must have completed the Statistical Inference Course or its equivalent and have completed mathematics training through differential and integral calculus.

C4.5. DESIGN OF A MANAGEMENT INFORMATION SYSTEM

C4.5.1. Civil Service Commission. A 4-day course.

C4.5.2. Description. This program focuses on the actual design of an information system rather than on the theoretical elements involved. Participants will be involved in a work project that will consist of analysis, design, and development of a management information system. Evaluation of each system will be conducted by a panel of experts. The workshop will cover such topics as:

C4.5.2.1. Systems analysis.

C4.5.2.2. Systems design.

C4.5.2.3. Information systems specifications.

C4.5.2.4. Current successful systems; and

C4.5.2.5. Systems of the future.

C4.5.3. Prerequisites. This program is intended primarily for persons having the responsibility for any one or more key elements of information systems design within their Agencies.

C4.6. ECONOMIC ANALYSIS FOR DECISION MAKING

C4.6.1. AMETA, Rock Island, Illinois. A 2-week course.

C4.6.2. Description

C4.6.2.1. This course is designed to provide enrollees the knowledge, comprehension, and application of economic analysis concepts and techniques useful in the evaluation of alternatives in resource allocation.

C4.6.2.2. The principles and techniques taught will provide a basis for selecting from among alternatives a course of action that is most cost effective when considering proposed investments. Emphasis is placed on the adoption of general business practices to interrelate with current DoD and Federal Government policies and guidelines. Through lectures and work sessions, attention is focused on the cost of future courses of action and resultant benefits or outputs. Topics include analytical decision making, applied decision theory, classification and measurement of costs, time-value of money, output measurement and analysis, and other basic techniques for comparison of alternatives.

C4.6.2.3. An understanding is developed through use of case studies illustrating resolution of problems in areas of resource allocation and capital investment. Major emphasis is on the use of existing models and not on the mathematics of model building.

C4.6.2.4. It is not the purpose of this course to consider the routine techniques the used in the generation and analysis of cost data generated by the regular accounting function.

C4.6.3. Prerequisites. The course is designed for persons who must develop and evaluate alternative methods of capital investment and resource allocation for the purpose of attaining objectives of functional and staff organizations. Satisfactory performance in this course is highly unlikely without proficiency in fundamental algebraic techniques and comprehension of concepts expressed by mathematical symbols. Enrollees are advised to review these fundamentals prior to attendance. It is suggested that enrollees bring slide rules or small hand calculators to the course.

C4.7. SURVEILLANCE OF COST SCHEDULE CONTROL SYSTEMS, SYS 361 (JT)

C4.7.1. AFIT/SL, Wright-Patterson Air Force Base, Ohio. A 10-day course.

C4.7.2. Description

C4.7.2.1. To develop the knowledge, management methods and background necessary to properly perform the maintenance and surveillance function of a contractor's system that has been validated under DoD Instruction 7000.2.

C4.7.2.2. This course includes an indepth lecture/discussion on:

C4.7.2.2.1. The DoD criteria (C/SCSC);

C4.7.2.2.2. The planning and executing of a plan for surveillance;

C4.7.2.2.3. The analysis of contractor-furnished performance measurement data; and

C4.7.2.2.4. The maintenance of systems discipline within the contractor's organization.

C4.7.2.3. The emphasis in the course is on the design and maintenance of the system to ensure the quality and reliability of the data underlying the contractor's submissions. Heavy emphasis is on logic, system analysis, data system trouble shooting and problem analysis.

C4.7.3. Prerequisites. This course is designed for military officers, civilian personnel in grades of GS-11 or higher and NCOs E7 - E9, such as cost or price analysts, financial management specialists, management analysts, production specialists, industrial engineers, auditors or audit staff officers, and other similar specialists who are, or will be, charged with the maintenance and surveillance of contractor performance measurement systems. Potential students should be familiar with MIL STD 881, AFSCR 375-7, AFLCP/AFSCP 173-5, AMCP 37-5 and NAVMAT P5240. Potential students should also have approximately 6 months experience in a C/SCSC position.

C4.7.4. Security Clearance. None.

C4.8. COST ANALYSIS FOR DECISION MAKING (ALMC-CB)

C4.8.1. ALMC, Fort Lee, Virginia. A 4-week course.

C4.8.2. Description

C4.8.2.1. To provide each participant with a basic knowledge and practical experience in the application of current methodologies used in the development of cost analysis studies.

C4.8.2.2. The course will provide each participant with knowledge and practical experience in the application of current methodologies used in the development of cost analysis studies. Emphasis is placed on selection of techniques to be employed, analysis and refinement of data, development of cost models, and the use of these models as predictors of life-cycle cost elements. Quantitative techniques included are mathematics, statistics, learning curve theory, uncertainty and sensitivity analysis, and regression analysis. Parametric estimating is stressed. Emphasis is also placed on operating and support costing, economic analysis, design-to-cost and life-cycle costing. The impact of cost and economic analyses on the decision-making process at all levels is integral to the course.

C4.8.3. Prerequisites. Nominees must be commissioned officers with at least 1 year of active duty remaining after completion of the course or civilian personnel with career or career conditional status and a work expectancy of at least 3 years after course completion.

C4.8.4. Security Clearance. None.

C4.9. DECISION RISK ANALYSIS FOR LOGISTICIANS (ALMC-DC)

C4.9.1. ALMC, Fort Lee, Virginia. A 2-week course.

C4.9.2. Description

C4.9.2.1. To provide a basic understanding of the concepts, techniques, and applications of decision-risk analysis as applied to logistics problems.

C4.9.2.2. This course introduces analytical techniques oriented to logistics areas, such as requirements, procurement, distribution and disposal. Topics covered include decision analysis, network analysis simulation, quantitative techniques clinic, and case studies.

C4.9.3. Prerequisites. Nominees must be commissioned officers with at least 1 year active duty remaining after completion of course or civilian personnel with career or career-conditional status and work expectancy of at least 3 years after course completion.

C4.9.4. Security Clearance. None.

C4.10. EMERGING TRENDS IN MANAGEMENT TECHNOLOGY

C4.10.1. AMETA, Rock Island, Illinois. A 3-day course.

C4.10.2. Description

C4.10.2.1. This seminar is designed to expose practicing managers and executives to the latest concepts in the art and science of management and administration.

C4.10.2.2. This seminar attempts to provide the manager and executive with a current awareness of the state-of-the-art, including new trends and directions, within his profession. This will include the latest theories, philosophies, approaches, tools, techniques, and systems, both on the management horizon and in use in advanced organizations. Advanced quantitative technology will be addressed as well as behavioral dimensions. Each workshop will be organized around a currently relevant theme, which will be publicized to potential participants sufficiently in advance of the course starting date.

C4.10.3. Prerequisites. Practicing managers, executives, and staff advisors occupying positions typically rated at the O-5 or GS-14 level and above.

C4.11. DEFENSE MANAGEMENT SYSTEMS COURSE (JT)

C4.11.1. Defense Resources Management Education Center Naval Post-graduate School, Monterey, California 93940. A 4-week course.

C4.11.2. Description

C4.11.2.1. To develop knowledge and understanding of the concepts, principles, processes, applications and techniques of Defense Management Systems (i.e., planning, programming, budgeting, and related activities). Emphasis is placed on the analytical aspects of resources management including needs, objectives, alternatives, analytical models, effectiveness, cost, and criteria analysis. Students are not expected to become experts or technicians in the various disciplines and subjects included in the curriculum, but to gain an orientation into the techniques of problem solving and decision making in the Department of Defense.

C4.11.2.2. To develop knowledge and understanding of the concepts, principles, processes, applications and techniques of Defense Management Systems (i.e., resources management systems and related activities). No attempt will be made to develop technical skills required in each of the planning, programming, and budgeting activities. To provide an overview of general management concepts as applied to Defense Management systems. To develop understanding and improve competence in techniques of problem solving and decision making in the Department of Defense.

C4.11.3. Prerequisites. Military personnel O-4 and above, and civilian employees GS-12 and above, occupying or being assigned to billets or positions involving any aspects of planning, programming, or budgeting and managing for DoD and Service resources.

C4.11.4. Housing. Due to the intensive nature of Defense Management Systems Course, all students are expected to use BOQ and closed mess facilities.

C4.11.5. Security Clearance. SECRET.

C4.12. COMPUTER ORIENTATION FOR INTERMEDIATE EXECUTIVES (JT)

C4.12.1. DODCI, Washington Navy Yard, Washington, DC. A 2-week course.

C4.12.2. Description

C4.12.2.1. The course is designed to provide an educational background for military and civilian mid-level managers who have had little or no training or experience in digital computer technology and automatic data processing techniques.

C4.12.2.2. The course covers computer capabilities, limitations and applications to include key concepts and planning factors for instituting new computer systems or improving existing systems. Early lectures on the basics of computer hardware and software establish a common reference point. Later, other lectures build on those concepts to stress each phase in the life cycle of designing a new computer system or improving an existing system; i.e., systems development management considerations, planning, design; etc. The student is provided "hands on" experience with a remote, time-sharing computer terminal using the BASIC programming language and is introduced to another higher-level programming language, COBOL. In addition, students are given an introduction to operations research and have the opportunity to analyze and solve problems using systems analysis and quantitative techniques.

C4.12.3. Prerequisites. Officers O-4/5/6 and civilians GS-13/14/15. No waivers.

C4.13. MANAGEMENT ANALYSIS WORKSHOP

C4.13.1. AMETA, Rock Island, Illinois. A 1-week course.

C4.13.2. Description

C4.13.2.1. This workshop is designed to provide a forum for experienced management analysts to examine and apply a variety of concepts and techniques for management improvement. Both proven and potential approaches are considered in helping develop the management analysis function to its fullest potential for assisting in the solution of operating management problems.

C4.13.2.2. Subjects included in this workshop are directed toward the analysis, evaluation, and designing of means for improving performance in an organizational setting. Topics will include the role of management analysis, management surveys and audits, systems and procedures organizational development, managerial communications and management performance indicators. Enrollees will explore topics of current interest to management and emphasis will be given to discussing case histories during the workshop sessions. Attendees are encouraged to bring data and exhibits from actual problems and situations for class discussion.

C4.13.3. Prerequisites. This course is designed primarily for supervisory and senior management analysts and management engineers who are responsible for a multi-functional area of management or manpower work (e.g., procedures analysis, organizational design, records management, manpower validation, etc.). Preference is given to applicants GS-12 and above, and their military equivalents, who have had at least 2-years progressive experience in more than one area of management analysis.

C4.14. ADVANCED MANAGEMENT COURSE

C4.14.1. AMETA, Rock Island, Illinois. A 1-week course.

C4.14.2. Description

C4.14.2.1. This program is designed to provide experienced and high-potential managers and executives, with a concentrated updating and expansion of previously acquired skills and knowledges of executive processes and environment. It is also designed to provide the most current state-of-the-art to further the individual's capabilities and to broaden his/her conceptualization and the understanding of the environment within which he/she and his/her organization must operate.

C4.14.2.2. Topics will include, but not be limited to, review of the functions and skills of the manager (primarily his/her conceptual and decision-making abilities); trends and issues in management; management of human resources; management by objectives; financial management; program planning and evaluation; productivity improvement and new developments in federal administrative processes.

C4.14.3. Prerequisites. Enrollment is limited to experienced intermediate-level managers and new and/or experienced executive level managers. This would normally include positions such as directorate chiefs at depots/arsenals/installations; directorate chiefs and deputies at major subordinate commands; division and office chiefs at Command, Departmental, and Agency-level organizations. These positions are typically at the O-5/GS-14 level and above. Attendees should have graduated from AMETA's Management of Managers Course, Top Management Seminar, or possess equivalent training or experience.

C4.15. LOGISTICS EXECUTIVE DEVELOPMENT

C4.15.1. ALMC, Fort Lee, Virginia. A 19-week course.

C4.15.2. Description. To provide in-depth logistics education for selected managers; prepare them for positions of responsibility in logistics management; and develop intellectual depth and analytical ability. Includes an overview of logistics echelons and organizations; the concepts of strategy, tactics, and logistics; the nature and applicability of management techniques; ADP applications to logistics; the management of standard systems the nature and scope of behavioral sciences; fundamental economic concepts that influence policy; quantitative analysis approaches to general problem solving; systems analysis; the environment of the procurement function; the development of the procurement function; the development of the Five-Year Defense Plan; life-cycle management models; personnel and logistics services; inter-Service support agreements and arrangements; and logistics gaming exercises.

C4.15.3. Prerequisites. Nominees must be of high caliber, demonstrating exceptional managerial potential. Commissioned officers of U.S. Military Services must have 8 years commissioned service. U.S. Army officers must have completed or been awarded constructive credit for branch career courses and must have 3 years of anticipated active duty service remaining after completion of the course. Also eligible are selected foreign officers and civilians, Reserve officers selected for attendance by the Chief, Army Reserve, and National Guard officers selected for attendance by the National Guard Bureau Civilian personnel must be in grade GS-12 or above with career status. Preference will be given to GS-13 employees assigned to positions in career fields in which this course is recommended or mandatory for promotion to GS-14 as prescribed in appropriate DA Civilian Personnel regulations. Personnel must have 5 years of cumulative experience in military logistics or closely related industrial experience. Personnel must have appraisals and specific awards and recognition directly related to logistics accomplishments. Preference will be given to personnel whose academic background evidences intellectual maturity as related to executive and managerial personnel, and whose career appraisal or the individual development plan (IDP) reflects that this course has been specifically programmed for the nominee as a basis for his planned progression. Waivers may be granted as quotas are available on an individual basis. All DARCOM nominees, military and civilian, must submit applications not later than 90 days prior to course starting date to: Commander, U.S. Army Material Development and Readiness Command, ATTN: DRCPT, 5001 Eisenhower Avenue, Alexandria, VA 22333.

C4.16. COST ACCOUNTING IN GOVERNMENT OPERATIONS

C4.16.1. Civil Service Commission. A 5-day course.

C4.16.2. Description. The participants will learn how a cost accounting system can be integrated into the Agency's general accounting system. They will learn how to record and summarize transactions so that Agency management can determine the results of operations, not only for the entire Agency, but also for individual cost centers, product lines, production runs, etc. Each participant will work in a simulated but realistic work environment, maintaining a complete cost accounting records for a hypothetical Agency. The complete cost accounting cycle will be covered from the recognition of a transaction through the preparation of various cost accounting reports. Specific topics include: distribution of cost; unit cost determinations; allocation of overhead; cost characteristics; e.g., fixed and variable; standard costs; variance analysis; direct costing; incremental costs; and replacement costs.

C4.16.3. Prerequisites. There are no grade restrictions for attendance. However, the course does presume an elementary knowledge of generally accepted accounting procedures, equivalent to that contained in the Commission's two 5-day Governmental Bookkeeping and Accounting courses and its 8-day Practice Problems in Governmental Accounting course. Persons not having this prerequisite should enroll in these courses before attempting this cost accounting course.

C4.17. THE FEDERAL BUDGET PROCESS

C4.17.1. Civil Service Commission. A 2-day course.

C4.17.2. Description. This course is for all Federal employees who need to understand the interfaces and interrelationships among those activities involved in budgeting. It is particularly helpful for those working in a professional position who are relatively new to the Government. However, new and old alike will profit. It provides the student with a general understanding of the function, history, and procedures of the Federal budget process. Readings, lectures, and discussions will cover the following topics: the place of budgeting; its evolution; general procedures in formulation, execution, and review; and roles played by the Agencies, OMB, and Congress.

C4.17.3. Prerequisites. This course is open to any professional employee. It should be indispensable to all employees in financial management or administration positions who need to learn more about budget processes. It is particularly well suited for those just entering the Federal service.

C4.18. BUDGET PRESENTATION AND JUSTIFICATION

C4.18.1. Civil Service Commission. A 9-day course.

C4.18.2. Description. This course teaches the participants how to:

C4.18.2.1. Effectively assist in the development of their Agency's budget justifications;

C4.18.2.2. Present or provide technical assistance for the presentation of their Agency's budget before the Office of Management and Budget and the Congressional Appropriations Committees; and

C4.18.2.3. Understand more fully the necessary elements that must be included in the budget submission to receive favorable consideration. This course teaches and provides practice in the techniques of budget presentation and justification. The participants are organized into "agency teams," which prepare and submit their budget before "OMB Examiners" and "Congressional Appropriations Committees" made up of their classmates. Each submission is critiqued by the class and suggested improvements discussed.

C4.18.3. Prerequisites. This course is for persons who assist in the preparation and/or presentation of their Agency's budget submission. Normally participants have been at the GS-12 level or above; however, employees below this level will be accepted provided they understand the budget formulation process and are able to take up where this course begins. New employees should attend Budget Formulation before attending this course. Higher-level program and staff managers should find this course valuable in developing their budget understanding.

AP1. APPENDIX 1

U.S. CIVIL SERVICE COMMISSION TRAINING CENTERS

REGION	GEOGRAPHIC BOUNDARIES
WASHINGTON, D.C.:	
(See page v and vi for the addresses of the six central office training centers)	District of Columbia, Alexandria, Fairfax, and Falls Church cities, Virginia: Arlington, Fairfax, Loudoun, and Prince William counties, Virginia; and Charles, Montgomery and Prince Georges counties, Maryland.
ATLANTA:	
Center Director Atlanta Region Regional Training Center U.S. Civil Service Commission 1340 Spring Street, N.W. Atlanta, GA 30309 Phone: (404) 526-3837	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.
BOSTON:	
Center Director Boston Region Regional Training Center U.S. Civil Service Commission Post Office & Courthouse Building Boston, Massachusetts 02109 Phone: (617) 223-2569	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
CHICAGO:	
Center Director Chicago Region Regional Training Center U.S. Civil Service Commission 230 South Dearborn, 29th Floor Chicago, IL 60604 Phone: (312) 353-2927	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.

DALLAS:

Center Director
Dallas Region
Regional Training Center
U.S. Civil Service Commission
1100 Commerce Street
Dallas, TX 75202
Phone: (214) 749-7302

Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Swan Islands; Panama Canal Zone.

Southwest Intergovernmental Training Center
U.S. Civil Service Commission
Hemisfair Plaza
643 E. Durango Blvd.
San Antonio, TX 78205
Phone: (512) 225-4523 (FTS)

DENVER:

Center Director
Denver Region
Regional Training Center
U.S. Civil Service Commission
Building 20
Denver Federal Center
Denver, Colorado 80225
Phone: (303) 234-2304

Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.

National Indian Training Center
P.O. Box 66
Brigham City, Utah 84302
Phone: (801) 723-3067 (Com'l.)
723-4434 (FTS)

NEW YORK:

Center Director
New York Region
Regional Training Center
U.S. Civil Service Commission
Federal Building
26 Federal Plaza
New York, NY 10007
Phone: (212) 264-0460

New Jersey, New York, Puerto Rico, Virgin Islands.

PHILADELPHIA:

Center Director
Philadelphia Region
Regional Training Center
U.S. Civil Service Commission
Wm. J. Green, Jr., Federal Bldg.
600 Arch Street
Philadelphia, PA 19106
Phone: (215) 597-4442

Delaware, Maryland (except Charles, Montgomery and Prince Georges Counties), Virginia (except Alexandria, Fairfax, Loudoun, and Prince William Counties), West Virginia and Pennsylvania.

SAN FRANCISCO:

Center Director
San Francisco Region
Regional Training Center
U.S. Civil Service Commission
Federal Building-Box 36010
450 Golden Gate Avenue
San Francisco, CA 94102
Phone: (415) 556-5738

Arizona, California, Hawaii, and Nevada. Also includes the U.S. Territories of Guam, American Samoa, Canton, Wake, Johnston, and Midway Islands. Australia, Bonins, Burma, Fiji, Taiwan, Hong Kong, Indonesia, Japan, Korea, New Zealand, Phillipines, Thailand, and the Trust Territories.

ST. LOUIS:

Center Director
St. Louis Region
Regional Training Center
U.S. Civil Service Commission
1256 Federal Building
1520 Market Street
St. Louis, MO 63103
Phone: (314) 425-4274

Iowa, Kansas, Nebraska, Missouri.

SEATTLE:

Center Director
Seattle Region
Regional Training Center
U.S. Civil Service Commission
3079 Federal Office Building
Seattle, Washington 98104
Phone: (206) 442-1719

Alaska, Idaho, Oregon, Washington.

AP2. APPENDIX 2

U.S. CIVIL SERVICE COMMISSION
EXECUTIVE SEMINAR CENTERS

BERKELEY EXECUTIVE SEMINAR CENTER

U.S. Civil Service Commission
2440 Bancroft Way (3rd Floor)
Berkeley, CA 94704
Telephone: (415) 841-3547
(FTS)
(415) 486-3412
(Cml.)

KINGS POINT EXECUTIVE SEMINAR CENTER

U.S. Civil Service Commission
c/o U.S. Merchant Marine Academy
Kings Point, NY 11024
Telephone: (516) 482-8343
(FTS)
(516) 487-4500
(Cml.)

FEDERAL EXECUTIVE INSTITUTE

U.S. Civil Service Commission
Route 29, North
Charlottesville, VA 22903
Phone: (804) 296-1295 (FTS)
(804) 296-0181 (Cml.)

OAK RIDGE EXECUTIVE SEMINAR CENTER

U.S. Civil Service Commission
Broadway and Kentucky Avenues
Oak Ridge, Tennessee 37830
Telephone: (615) 483-4708
(FTS)
(615) 482-4933
(Cml.)

DELAWARE EXECUTIVE SEMINAR CENTER

U.S. Civil Service Commission
2600 Pennsylvania Avenue
Wilmington, Delaware 19806

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 461 164 10146